Textile World

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TEXTILE WORLD'S 90th ANNIVERSARY

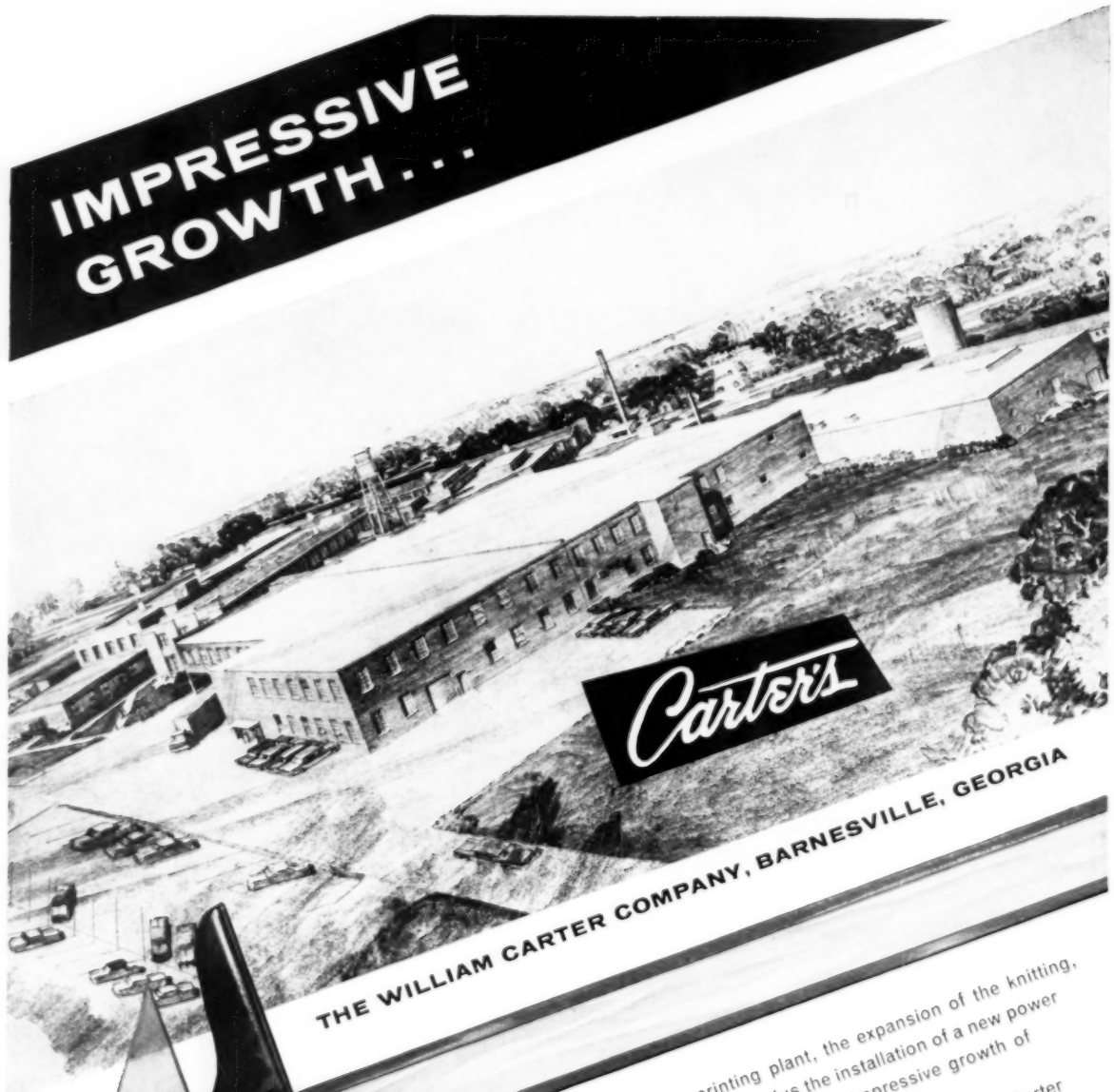
1868

1958

HOW FAST WILL LOOMS RUN?
page 58

HOW MILLS ARE RUNNING ZEFRAN
page 49

IMPRESSIVE GROWTH . . .



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This Month in TEXTILE WORLD

August, 1958
Volume 108, No. 8

BUSINESS

Middle East War Scare May Cause Build-up . . . but mills and their customers are reacting cautiously in the early stages of the crisis . . . 3

Business Upturn Continues Strong. The improved tone of textile business that developed in May and June took a strong upward surge after the Fourth of July holidays. . . . 4

Wool-Imports Cut-Off Point Sparks Criticism in Europe. Exporters step up criticism of Geneva Reservation as trigger point for rise in import duties is reached . . . 5

Textile-Industry Ills Get Senate Attention. Mills get on record about government policies that are hurting the industry . . . 7

Support Price Lowered on Extra-Long Cotton. A lower price for U. S. cotton and revision of import quotas will give mills running extra-long-staple cotton a better supply this crop year . . . 8

Textile World's Index and Monthly Indicators . . . 10

MANAGEMENT

Plan 1958 Now for Greater Profits (Editorial) . . . 43

Modernize Now for Growth and Profits . . . 45

TEXTILE WORLD's 90th Birthday . . . 47

Exit Interviews Can Help Your Employee Relations. If you can find out the real reasons why an employee is quitting, you can often correct conditions that may be making other workers dissatisfied . . . 81

PRODUCTION

. . . SPECIAL FEATURE

Zefran—the Newest Commercial Fiber. What Is Zefran? What is it used for? What manufacturing systems is it best adapted for? How are mills running it? TEXTILE WORLD's editors report on what mills have learned about yarn manufacture, weaving, knitting, and chemical treatment of the new fiber . . . 49

. . . QUALITY CONTROL

How 32 Mills Organize Quality Control . . . 130

. . . CARDING

Australian Lap Conveyor Cuts Handling Costs $5,000 a Year . . . sorts laps according to cotton blends, and operates partly by power and partly by gravity . . . 60

. . . SPINNING

How Woonsocket Spinning Co. Spins Luxury Fibers. Vicuna, cashmere, fur blends, and Iceland wool are some of the specialty fibers spun . . . 56

. . . WEAVING

Alabama Mill Executives Go for Plastic Shuttles. TOE meeting also discusses how to prevent sloughed and kinky filling . . . 55

How Fast Will Your Looms Run? Here's a program you can follow to increase loom speed, step up general efficiency, and reduce bad work . . . 58

. . . KNITTING

Boarders Now Inspect Socks at Athens Hosiery Mills. Inspecting socks stretched on the boarding form results in a better inspecting job. An incentive rate encourages boarders to find faults . . . 126

. . . ENGINEERING

Maintenance Checklist Keeps Centrifugal Pumps Running . . . 128

Please turn the page

This Month in TEXTILE WORLD continued

CHEMICAL TREATMENT

Textile Chemicals 61
New Dyes & Chemicals 64
How Ohio Falls Finishes Industrial Fabrics 65
Combine Chlorine and Peroxide for Better Cotton Bleaching 69
Joanna Modernizes Bleaching and Coating Methods . . . by installing continuous ranges. 72
Embossing Upgrades Thermoplastic Fabrics . . . and converts ordinary fabrics to high-style materials 76

DEPARTMENTS

Calendar 14
Editorial 43
Equipment and Supply News 101
Fibers, Yarns, Fabrics 97
Kinks and Short-Cuts 83
Mill Maintenance 124
New Dyes and Chemicals 64
New Literature 110
News About Men 132
News About Mills 13
News About Suppliers 134
Obituary 133
Pointers for Supervisors 81
Questions and Answers 93
Reader Service 147
Round Table 16
Textile Business 3
Textile Chemicals 61
Advertisers' Index 146

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TEXTILE BUSINESS

Textile World

A U G U S T • 1 9 5 8

THIS MONTH'S HIGHLIGHTS

War Scare May Cause Build-up
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Business Upturn Strengthens
•
Wool-Import Plan Criticized
•
Senate Hears Textile Problems
•
Outlook for Extra-Long Cotton
•
Cotton Crop Hits 82-Year Low
•
Use of Silk Turns Down
•
Russia To Build Acetate Plant
•
Hosiery Imports Drop

Middle East War Scare May Cause Build-up

The big question in textile business late last month was: What about the Middle East?

Overnight the tenor of market activity changed from a tug-of-war on prices of textile goods to efforts to probe the danger and its possible effects on inventories and demand.

As happens in all war scares, futures prices of vital commodities—cotton, wool, sugar, etc.—jumped when the U. S. moved troops into Lebanon. But an air of caution settled quickly and future speculation eased off.

There was no panic buying of textiles, but a strong surge of buying did develop ["Business Upturn Continues Strong," p.4]. However, it was attributed to buyers being convinced that a general firming is ahead, not to the Middle East scare.

Whether or not strong speculative buying develops later depends on the course of events. Supply conditions are primed for it. Textile users have been on a hand-to-mouth basis for months and had just begun to place important forward orders when the Middle East news broke.

If the war scare gets bad enough or if fighting starts, it's almost certain that another round of speculative buying and production of textile goods will start—and pave the way for another recession.

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But that would occur some months from now, if at all.

For the last three months, business has been on the way up from the cyclical bottom reached in April. Few, if any, businessmen let possible crises, such as the sudden trouble in the Middle East, influence their planning.

Crises of this kind are so unpredictable that in their early stages they seldom change the normal course of business. It is only when a large-scale, long-term national commitment is made that events shake business out of its rhythm.

But late 1957 and 1958 have been an inventory-reduction period. Not only mill customers, but also mills themselves, have been whittling down inventories of goods, fiber, equipment, and supplies.

•

The immediate effect of the Middle East trouble is that it is forcing mills and their customers to study their own supply situation and keep an eye on day-to-day international developments and textile market trends.

With inventories low, a condition of tight supply could develop quickly. Purchasing agents, remembering past crises, are acutely aware of possible supply problems; and many of them are alerting their managements to their present supply situations and the speed with which the present pattern could change.

For the present, until the Middle East picture stabilizes, the only sensible course is to hold steady and let business dictate the moves.

TEXTILE BUSINESS

Business Upturn Continues Strong

The improved tone of textile business that developed in May and June took a strong upward surge last month after the Fourth of July holidays.

• **Bellwether 80-square print cloth,** which started improving in May and continued through June, registered big gains in sales and considerable improvement in price.

In the first half of the month, some 80x80 sales were in carload lots for quick delivery at prices of 17⅜¢ and 17½¢. Some mills cleaned out inventory at 17¼¢. Volume sales for delivery in the fourth quarter of 1958 and the first quarter of 1959 were booked, with 80x80 going at 17⅜¢ and 39-in. 68x72 4.75-yd. at 15¢.

These transactions were mostly by mills desiring orders in the book. Many mills were holding out for 17½¢ on 80x80.

Interest in forward buying was high, but many big buyers were shopping for 80x80 at 17¼¢.

But a few days past midmonth, a buying surge estimated in the neighborhood of 20-million yds. developed. Volume sales of 80x80 were made for third-quarter delivery at 17½¢, fourth-quarter delivery at 17⅝¢, and first-quarter-1959 delivery at 18¢.

Individual orders by small converters were running up to 500,000 yds.

In general, the market pattern on print cloth for the last three months has been:

• In May, price shading was discontinued, and scattered sales were made on standard-grade 80x80 at 17¼¢.

• In June, the price in general increased to 17⅜¢, but volume was small, and buyers shopped for price shading.

• In July, volume and prices stepped up for both quick and forward delivery in what appeared to be a firm conviction that bargain days are over.

•

• **Department-store sales,** which have been fluctuating from 2% to 3% below last year's sales, were running 2% below at the middle of last month. In the first week of July, sales were 1% ahead of the same week last year; but in the second week, they jumped to 5% ahead of the same week last year.

• **Rayon and acetate yarn shipments,** up 5% from April to May, held most of that gain in June. Shipments were 71-million lbs. in April, 74.2-million lbs. in May, and 74.07-million lbs. in June. The June drop was only 0.1%.

• **Women's nylon-hosiery shipments** were running about even with shipments last year. In the first five months of 1958, shipments totaled 23.8-million doz. pairs, down only 0.2-million from the 24-million doz. pairs shipped in the first five months of 1957. But prices were firmer, inventories smaller, and distress selling at a minimum.

• **Cotton yarns for knitting** were selling into the fourth quarter at firm prices.

• **Homefurnishings and carpets,** though not moving at much of

Plastics Industry Guns For Greater Markets

Plastics, already a strong competitor to textile fabrics in many uses, will get a big push at the Eighth National Plastics Exposition in Chicago Nov. 17-21.

With an exposition theme of "Plastics for Profits," the $2-billion plastics industry will deal "some telling blows" to rising production costs in many industries, the Society of the Plastics Industry, sponsor of the exposition, says.

Engineers, scientists, production men, and marketing men will stress how plastic materials, machines, and methods are helping manufacturers in many industries cut costs and increase profits.

Mills' Financial Condition Is Better Than Late Profits

The textile industry is in a sounder financial condition than current profits indicate, according to the latest Quarterly Financial Report for Manufacturing Corporations, issued by the Federal Trade Commission and the Securities & Exchange Commission.

Here is a comparison of the 28 industries (14 durable-goods industries and 14 nondurable-goods industries) listed in the report on several important financial ratios at the end of the first quarter of 1958:

• **Current assets to current liabilities:** Assets of textile mills were 2.85 times liabilities. Seventeen of the 28 industries were in a less-favorable position than textiles and 10 were in a more-favorable position.

• **Cash and Government securities to current liabilities:** Cash and securities held by mills were 0.38 times liabilities. Seven industries were in a less-favorable position and 20 in a more-favorable position.

• **Current (quick) assets to total assets:** Current assets represented 59.0% of total assets held by mills. Twelve industries were in a less-favorable position and 15 in a more-favorable position.

• **Stockholders' equity to debt:** Equity was 3.53 times debt. Ten industries were in a less-favorable po-

an improved rate, seemed certain of a good last half, partly as a result of rapidly improving home-building.

•

Improvement in textiles paralleled the improvement in the over-all economy. The upturn in general-business indicators that started in May continued in June, according to figures released by the Federal Reserve Board.

- **Industrial production,** which rose from an index (1947-49—100) of 126 in April to 128 in May, jumped two more points to 130 in June.
- **Steel production** gained 15% in June, to carry the steel-production index to 104 and place operations at 79% of capacity, compared with 64% of capacity in May.
- **Personal income** revised figures showed a rise in June for the fourth straight month and approached the all-time high set in August, 1957. The rise was $2-billion in June, after a $1.2-billion rise in May. The June rate was only $0.3-billion below the August, 1957, rate.
- **Home-building** jumped 7% from May to June and hit an annual rate of 1,090,000 starts. That was 80,000 starts ahead of the May rate of 1,010,000 and was the highest rate in 21 months.

•

Most observers now think that the business upturn is firm and likely to continue for many months. For the over-all economy, many experts expect a "break-through" to new high levels.

Before the trouble in the Middle East, expectations were for a slow but steady climb that would really get rolling some time next year. The Middle East may step up the tempo.

In textiles, if the Middle East trouble quiets down and no scare-buying spree develops, a firm, steady improvement should carry through most of next year.

Wool-Imports Cut-off Point Sparks Criticism in Europe

The cut-off point on the 1958 wool-fabric import quota was reached early last month; and almost immediately European exporters, principally British and Italian, stepped up their criticism of the Geneva Reservation plan.

According to the plan, import duties on woolen and worsted fabrics rise from 25% to 45%, plus 15% ad valorem in each case, when imports reach 5% of the three-year average annual U. S. production. The trigger point this year, announced March 7, was 14.2-million yds. Imports reached that point at the close of business on July 2, according to preliminary estimates by the Commission of Customs, Quota Unit, Washington, D. C.

•

A tug-of-war on the Geneva Reservation has been going on ever since the plan went into effect for the last quarter of 1956. U. S. woolen and worsted mills want the quota and tariff plan

sition and 17 in a more-favorable position.

- **Net working capital** (excess of current assets over current liabilities): The textile industry had a net working capital of $3,330-million. Sixteen industries had less working capital and 11 had more.

The average net working capital of the 28 manufacturing industries was $2,490-million; of the 14 durable-goods industries (omitting "Miscellaneous"), $2,668-million; and of the 14 nondurable-goods industries, $2,311-million.

Wool Groups Unite To Promote Wool Merits

Several wool associations last month announced the organization of a new association called Woolens and Worsted of America "to inform the public of the merits of American-made wool products and to stimulate and increase sales."

This is the first time since 1937 that the various trade associations have undertaken joint financing of a wool-merchandising program.

Participating associations are: The American Sheep Producers Council, The Wool Promotion Fund (acting for the Boston and Philadelphia Wool Trade Associations), The National Association of Wool Manufacturers, The Northern Textile Association, The Jersey Institute, The Felt Association, The National Knitted Outerwear Association, and the Midwestern Woolen Manufacturers Association.

French Cotton Mills Had Banner Year in 1957

PARIS—Production of French cotton mills was higher in 1957 than in any other year since the war.

Spinning production last year reached 301,000 metric tons—a jump of 11.5% over 1956 and 5.2% over the previous postwar record made in 1954.

Production of woven cotton goods amounted to 226,000 metric tons, an increase of 15% over 1956 and 4% over 1954, according to the French Cotton Trade Association.

Although sales of cotton textiles rose at the same rate of production during 1957, exports to the French Overseas Territories dropped substantially. These territories, traditionally customers of the French cotton industry, are now being flooded with "cheap Asian and Iron-Curtain textiles," according to the association.

TEXTILE BUSINESS

Cotton Crop This Year Hits 82-Year Low

The cotton acreage this year is the smallest crop planted in the U. S. since 1876, according to the Dept. of Agriculture's July 1 acreage report.

Only 12,402,000 acres are in cultivation this year, compared to 14,066,000 acres in cultivation on July 1 last year—a drop of 12%. The 1947-1956 average was 22,611,000 acres, nearly double this year's planting.

Usually, a percentage of the acres in cultivation on July 1 are not harvested. Last year, only 13,558,000 acres of the 14,066,000 July 1 acres were harvested. If the 10-year average holds this year, there will be only 11,928,000 acres harvested—an 82-year low.

Israel Will Build $4-Million New Mill

TEL-AVIV, ISRAEL — Immediately before trouble broke in the Middle East, final plans had been made for a new $4-million cotton spinning and weaving mill in Nazareth (Galilee).

It is a joint Swiss-Italian-Israeli venture. A group of foreign investors is putting up $1.8-million in foreign currency, and most of the balance is being loaned in Israeli currency by the government out of Development Budget funds.

The mill will have about 350,000 sq. ft. of floor space and will be equipped with British and Italian spinning, weaving, dyeing, and printing machinery. Capacity will be 20,000 spindles and 300 looms.

•

Present cotton spinners don't look on the venture with much favor.

Although Israel operates only about 120,000 spindles, production is outrunning sales so far that about half the spindles were cut back early last month from three-shift operation to two shifts.

Spinners and weavers say that unless more foreign markets are found Israel's textile industry will face a serious crisis soon.

Nevertheless, the government's policy is to encourage the establishstiffened. Foreign exporters, particularly British, want the whole thing thrown out.

Here is the way things line up:

• **United States**

Woolen and worsted manufacturers continually point to the liquidation of spindles and looms in the U. S. in a sustained campaign to cut out wool-fabric imports.

At the Senate Subcommittee hearing last month [p. 7], William I. Kent, president of the National Association of Wool Manufacturers cited these reductions from 1946 to 1957:

- Woven-cloth output down 46%
- Looms down 51%
- Worsted spinning spindles down 63%
- Woolen spinning spindles down 57%
- More than 200 mills liquidated

"While this severe liquidation was talking place," Mr. Kent pointed out:

- Cloth imports rose over 673%
- Tariffs cuts ranged from 17% to 70%
- U. S. wages rose to an average of $1.60 an hour compared to 50¢ in Britain, 14¢ in Japan, 30¢ in Italy, and 45¢ in France.

"Tariffs," he said, "should be flexible enough to follow the changing trends in a changing world. The rising competition from the Orient makes a mockery of the tariff rates designed to offset European competition."

But the Geneva Reservation has "stemmed the heavy influx of imports except from Japan."

So what U. S. mills want now is some sort of extension of import controls to give protection not only against relatively high-priced fabrics from Europe but also low-priced fabrics from Japan.

•

• **Great Britain**

British exporters lashed out at the Geneva Reservation plan after the filling of the 1958 tariff quota was announced. J. Douglas Hood, speaking for British exporting woolen and worsted mills, pointed to three results of the plan:

- Mills in England and Scotland are having to curtail production from five to three days.
- Unemployment is rising.
- U. S. buyers who would normally buy high-quality, high-price British woolens and worsteds will be forced to fill their needs with staple goods from other countries that are competitive with U. S. fabrics.

The Geneva Reservation plan has failed to protect U. S. mills, Mr. Hood said, because British goods are "highly stylized and exclusively designed" and are not competitive with U. S. fabrics.

On the contrary, he pointed out, the position of U. S. mills has continued to worsen during the three years the plan has been in effect.

•

Experienced observers recognize that there is some jockeying for position in these arguments. In almost every textile country

in the world, there is a campaign now going on to increase exports and decrease imports.

While British woolen and worsted mills were criticizing the U. S. on the Geneva Reservation, British officials were dickering with Japan, India, and Hong Kong to put a limit on cotton exports to Britain, and British man-made-fiber mills were kicking up dust to get the same protection cotton mills are about to get.

With protectionist sentiment now strong in the U. S. Senate and trouble in the Middle East showing the folly of sacrificing a basic national industry to the bubble of "free trade in one world," there is small chance that the Geneva Reservation will be scrapped.

Chances are far better that U. S. mills will win stronger market protection.

Textile-Industry Ills Get Senate Attention

The textile industry succeeded last month in laying its economic problems on the line to the Senate Subcommittee headed by Sen. John Pastore (D.-R.I.).

This was one of the rare instances in late years that problems of the whole industry could be aired at one hearing and in an atmosphere of understanding.

Few, if any, new problems or proposals came out. But three things made the hearings significant:

- Problems facing the whole industry were presented.
- The tone of the presentations was one of sincere effort to solve important problems rather than seek favors.
- A strong report of basic industry ills is now on record.

●

Most of the testimony hinged on government policies that have adverse effects on the textile industry.

Halbert M. Jones, president of ACMI, pointed out four broad areas in which the textile industry is "uniquely sensitive" to government policies:

- **The two-price-cotton system.**

The government policy is (a) to support the price of domestic cotton at a high level to benefit cotton growers, (b) force domestic mills to use American cotton by limiting cotton imports to 1% of U. S. production, and (c) to sell a huge surplus of cotton abroad at world prices, about 6¢ to 8¢ a lb. below the price U. S. mills have to pay.

All of these policies intended to aid cotton farmers work to the detriment of textile mills.

- **The export and imports pinch.**

Forced high fiber price and high wages, resulting in high prices for yarns and fabrics, have lost U. S. export markets and made the domestic textile market a target for foreign imports.

(Continued on page 8)

ment of more cotton spinning and weaving mills. It's almost certain—barring war or national emergency—that other new mills will follow the Nazareth mill.

Use of Silk Turns Down

The sharply rising use of silk for the last couple of years turned down this year, according to figures issued by the American Silk Council, Inc.

Raw-silk deliveries to mills for the first six months of this year dropped to 17,886 bales, compared to 21,636 bales delivered in the first six months of 1957. This represents a drop of 17.3%.

Raw-silk imports dropped more drastically. Imports for the first six months were 13,932 bales, compared to 20,780 bales in the first six months of 1957—a drop of 32.9%.

Stocks on hand are also down. At the end of June, there were 5,484 bales on hand, compared to 8,010 at the end of June 1957. This is a decrease of 31.5%.

These drops signify an important swing away from silk. For two or three years, silk has found a growing market in dress goods and suitings. But the fact that imports and stocks on hand have dropped nearly twice as much as deliveries indicates that silk dealers are not expecting much recovery this year.

Style Changes Hit 1959 Fabrics

Important switches will occur in fabrics and colors for men's wear in the spring of 1959, according to the survey of retailers conducted annually by the Clothing Mfrs. Assn.

- Summer-weight fabrics will be in greater demand than regular-weight worsteds, woolens, and gabardines combined. In the 1952 survey, summer-weight suits represented 25% of all suits sold. This year, they will represent 51%.
- Blends of 55% Dacron and 45% worsted in weights of 6 oz. to 8½ oz. will represent 48% of the market—up 3% over these fabrics' share of the 1958 spring market.
- Colors will be lighter than in 1958. Medium shades will account for about one-third of all suits, and light shades will increase from 10% in 1958 to 14% in 1959. Grays and tans will dominate. Dark suits will decline from 35% of the market in 1958 to 26% in spring 1959.

Russia Contracts for New Acetate Plant

LONDON—Russia's bid to build a giant textile industry [TEXTILE WORLD, June, p. 3] took a big step forward last month.

Courtaulds Ltd., Great Britain's largest fiber manufacturer, signed a contract to supply Russia with machinery and know-how for an acetate plant.

The value of the contract is "some millions of pounds," Courtlaulds told TEXTILE WORLD. "The Russians have asked us not to disclose the figures."

The contract was signed with Technopromimport, Moscow.

Russia will build the plant, and Courtaulds will be responsible for installing the machinery and starting the plant in production. Russian raw materials will be used to make the acetate.

U. S. Wool Shipments Drop 25% From Last Year

SYDNEY—Wool shipments to the United States were off nearly 25% from last year, the National Council of Wool Selling Brokers announced last month.

In the 11 months ending May 31 of this year, the U. S. bought 35,601,000 lbs. of wool. In the same period last year, it bought 47,261,000 lbs. The drop this year amounted to 11,660,000 lbs.

This year's volume put the U. S. in seventh place as a buyer of Australian wool. Biggest buyers were the United Kingdom, Japan, and France.

Textile Groups in Canada Unite in One Association

Mills, fiber producers, and garment manufacturers in Canada last month announced the formation of a united association "to act upon matters of common interest."

Called The Canadian Apparel and Textile Manufacturers Association, it is perhaps the first association of its kind in the world.

"Intensive surveys of conditions" in the industries participating re-

- **Foreign aid.**

The U. S. has actively helped build up the textile industries in other countries through the foreign-aid program. These industries have largely taken over the former U. S. export markets and increased competition in the U. S.

- **An outmoded tax and depreciation system.**

As developed later in the hearings by James H. Hunter, president of the American Textile Machinery Assn., present depreciation schedules were set up when machinery was operated one shift a day and are unrealistic for present three-shift operation.

- **Government research and development programs.**

Huge expenditures by the government favor "high-growth, high-prosperity industries" but neglect the textile industry.

●

These problems more or less summarize the three-day hearings and are likely to be the main problems discussed in the Subcommittee field hearings scheduled to start in September or October.

What good will come of it all is not certain.

Sen. Pastore said, "We can't change over-all U. S. foreign trade policy or law in these hearings." But he pointed out that the Subcommittee will file a strong report urging more-favorable government administration of tariff, tax, and farm-policy laws to help depressed mills.

Some of the curbs on tariff-cutting asked for at the hearings were included in the trade bill that came before the Senate only a few days after the hearings.

Although the hearings may not result in any dramatic changes in government policies adverse to the textile industry, they have served to put the industry's problems on record and warn government agencies that Congress is interested in seeing mills get more-favorable treatment in policy administration.

Support Price Lowered On Extra-Long Cotton

Mills running extra-long-staple cotton will have a more-favorable supply situation this crop year.

Both mills using this cotton and the Supima Assn. of America, whose 4,000 members represent the chief extra-long-staple interests in the U. S., requested the government to:

- Reduce the support price of this cotton so that growers, merchants, and users could compete with lower world prices of Egyptian and Sudanese cotton of similar length and quality.
- Revise the quota on extra-long-staple cotton so that most of the quota cannot be filled by long-staple cottons just short of 1⅜ ins.

Last month, the Dept. of Agriculture accepted the request to reduce the support price. On this year's crop, the support level

will be 65% of the current parity price of 83¢ a lb. Last year, the support price was 75% of the parity price.

In effective price, the support level this year will be 53.95¢ per lb., compared with 59.70¢ per lb. last crop year.

●

This is the second time the Supima Assn., backed by mills using extra-long-staple cotton, has requested a cut in the support price.

Four years ago, Supima growers set this pattern of going contrary to the national policy of high support prices and government-warehousing of a big surplus. At that time, they asked that the price support be dropped from 90% of parity to the 75% in effect since then.

The result then was to cut the minimum price of Supima cotton about 10¢ a lb. Growers stood to lose $50 a bale, or a total of more than $2-million on the total crop.

However, the market price of Supima held, and growers did not lose.

But the price of Egyptian Karnak, Supima's chief competitor, has now dropped from 70¢ a lb. to 52¢ a lb. delivered in the U. S.

At the 1957 support level of about 62¢ a lb., Supima's mill-delivered price was 65¢ to 67¢ a lb. in the U. S.

In Europe, the price advantage was more. Karnak was delivered in Liverpool at 48¢ a lb. and Supima at about 70¢ a lb.

The new support level could reduce the delivered price of Supima to about 57¢ to 59¢ a lb. in the U. S. and to about 62¢ in Liverpool if market supply and demand forces it.

●

Early last month Pres. Eisenhower issued a proclamation changing the import quota, effective Aug. 1.

The request for the import-quota revision was intended to avoid a recurrence of what happened this year. About half of the quota of 45.6-million lbs. (a little over 91,000 500-lb. bales) was quickly filled with Mexican cotton under 1⅜ ins.

But importers of extra-long-staple cotton didn't wait this quota year for protection. Between June 1 and August 1, the beginning of the new quota period, they stored 10,000 bales of 1⅜-in. cotton, chiefly from Egypt and Peru, in State Ports Authority warehouses at Charleston, S. C. On August 1, they released it to the market.

However, the new import revision more or less nullified their preparedness.

The revision calls for an allotment of 39.5-million lbs. a year for extra-long-staple cotton (Egyptian and Sudanese varieties) and 6.0-million lbs. for long-staple cotton under 1⅜ ins.

Mills were the leaders in proposing these quota revisions, but the Supima Assn. went along with the proposal as a temporary solution to flooding the market with just-under-1⅜-in. cotton.

But the association and growers want the over-all quota lowered. The 91,000 to 92,000 bales meet nearly all the needs of U. S. mills, and growers and the association want more protection.

vealed many areas in which they had common problems and pointed up the need for united effort.

"At the moment," the Association announced, "undoubtedly the most pressing matter is the alarming increase in the volume of imports."

Hosiery Imports Drop

Hosiery imports in the first quarter of this year dropped 17.4% below the same period last year. In dozens of pairs, the drop was from 67,867 to 56,082, according to the National Association of Hosiery Manufacturers.

A sharp drop was registered for the month of March. In March, 1957, imports were 22,919 doz. pairs. In March, 1958, they were 11,536 doz. pairs—almost a 50% drop. In value, the drop was from $183,429 last March to $84,548 in March of this year.

Wool hosiery, which accounts for almost 90% of all hosiery imports, dropped from 59,759 doz. pairs in the first quarter of 1957 to 47,658 doz. pairs in the first quarter of this year.

For the month of March, the drop in wool-hosiery imports was from 22,919 doz. pairs last year to 9,437 doz. pairs this year.

Price of Twills Cut

The price of Type 4 41-in. carded twills was knocked down last month from ¼¢ to 2¾¢ a yd.

Twill constructions affected were:

- 8.5-oz., down to 56¢ from 58¢
- 8.2-oz., down to 52¢ from 54¾¢
- 7.25-oz., down to 48¢ from 49¢
- 6-oz., down to 46¢ from 48¢
- 5-oz., down to 43¢ from 43¼¢

Reason given for the reduction was excessive inventories at mills as a result of sateens cutting into the market for men's workwear and slacks.

Wellington Sears led the cut and was quickly followed by Avondale, Cone, McCampbell, J. P. Stevens, and Woodward, Baldwin.

Employment Drops In British Cotton Mills

LONDON — Britain's ailing cotton-textile industry took another blow in May when 4,250 workers left the declining labor force.

For nearly seven years operators have been drifting away from Lancashire's mills; and with only 227,660 workers left, employment is down 100,000 from the 1951 peak.

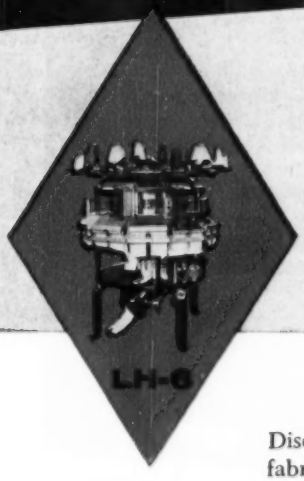
Index of manhours worked in the textile industry adjusted for changes in productivity

Textile World's Monthly Indicators

	Latest Month	Previous Month	Year Ago
Textile World's Index (1954 = 100)	**99**	**101**	**105**
Employment (thousands) B.L.S.	931.7	922.8	1,005.2
Production Workers (thousands) B.L.S.	841.2	832.2	914.0
Weekly Earnings B.L.S.	$57.30	$55.95	$58.35
Hourly Earnings B.L.S.	$1.50	$1.50	$1.50
Weekly Hours Worked B.L.S.	38.2	37.3	38.9
Production Index (1947–1949 = 100) F.R.B.	93	94	99
Wholesale Price Index (1947–1949 = 100) B.L.S.	93.3	93.5	95.5
Manufacturers' Sales (million $) Commerce	1,017	1,016	1,079
Manufacturers' Inventories (million $) Commerce	2,585	2,606	2,625
Inventories to Sales Ratio	2.54	2.56	2.43
Exports (million $) Commerce	136.7	132.2	154.6
Imports (million $) Commerce	72.4	74.3	82.8
Stock Price Index (1941–43 = 10) Standard & Poor's	21.19	21.04	22.21
Failures (number) Dun and Bradstreet	14	3	6

National Economic Indicators

	Latest Month	Previous Month	Year Ago
Industrial Production (1947–1949 = 100) F.R.B.	130	128	145
Consumer Prices (1947–1949 = 100) B.L.S.	123.6	123.5	119.6
Wholesale prices (1947–1949 = 100) B.L.S.	119.1	119.5	117.4
Population (millions) Census	171.3	171.0	168.2
Unemployment (millions) Census	5.4	4.9	3.3
Employment (millions) Census	65.0	64.1	66.5
Personal Income (billion $) Commerce	351.8	349.9	350.7



"Knitted Outerwear" . . . from the Wildman Jacquard LH-6

Discriminating people who want both style and quality in a sweater, daily choose knitted fabrics from this versatile machine • The LH-6 will knit plain jersey . . . links and links . . . cross links and links . . . half cardigan . . . 2 or 3 color Jacquard designs . . . self pattern designs – with 2 x 2 or 1 x 1 cuff • For complete technical data, write for bulletin LH-6.

All day long . . . sweaters belong

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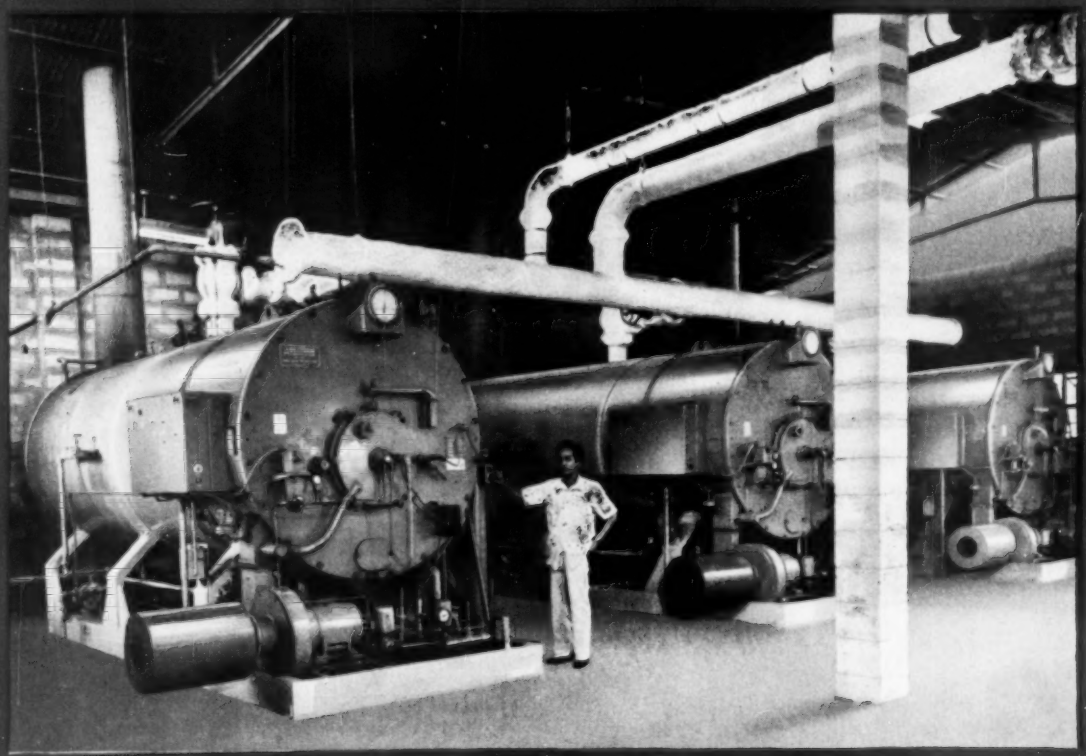
Manufacturers of HEMPHILL BANNER Knitting Machines

"When We Expand We Will Stick to AMESTEAM"



AMESTEAM GENERATOR AUTOMATIC BOILERS POWER PHILIPPINES' MOST MODERN TEXTILE FINISHING PLANT

"We were right in choosing AMESTEAM GENERATORS," writes Mr. Felix Lirag, General Manager of Lirag Textile Mills, Manila, Philippines.

"We have the most modern textile finishing plant in the Philippines today, and the demand for our fabrics is heavy. Thanks to the fine performance of our three 200 HP, 125# W. P. AMESTEAM GENERATORS, we have operated our finishing plant continuously 24 hours a day since we started in 1956.

"When we expand, we will stick to AMESTEAM GENERATORS."

Letters like this come to us from all parts of the world, telling of the satisfaction enjoyed by users of AMESTEAM GENERATORS. Most of these users are **repeat** customers, because they are sold on the **lower-cost steam** dependably delivered by AMESTEAM GENERATORS.

When **you** choose AMESTEAM GENERATORS, you are assured of the same economical service and consistently satisfactory performance received by AMES users for over 110 years.

WHAT'S *YOUR* STEAM PROBLEM ?

For high-quality automatic package boilers, 10 to 600 HP, write today for name of your AMESTEAM GENERATOR representative and our latest catalog.

Exclusive Sales and Service Representative for The Republic of The Philippines

ATKINS, KROLL & CO., INC.

MANILA • CEBU

AMES IRON WORKS INC.

BOX Y-88, OSWEGO, N. Y.

Abney Mills, Greenwood, S. C., will expand and consolidate its dyeing and finishing operations. The dyeing and finishing operations of the company's Gossett Dyeing & Finishing Plant, Anderson, S. C., will be consolidated with the facilities at Renfrew Bleachery, Travelers Rest, S. C. Additional buildings will be constructed at Renfrew, and machinery and equipment at the Gossett plant will be transferred to Renfrew.

Berglas Woolen Mills, Inc., Dudley, Mass., has been formed to produce woolens, worsteds, and blends. Sales and styling will be handled by Berglas International.

Berkshire Hathaway, Inc., Providence, R. I., has sold its vacant Greylock Mill, North Adams, Mass., for $40,000 plus the amount of the 1958 taxes.

Carolina Throwing Co., Kings Mountain, N. C., is planning to build a two-story addition. The additional 3,456 feet will provide space for production machinery and storage. It will be built of brick.

Carrboro Woolen Mills, Carrboro, N. C., will close at the end of this month. The mill employed 380 people.

William Carter Co., Needham Heights, Mass., has announced the creation of the Toddlers' Div. This division will concentrate in outerwear for toddler sizes.

Cosmos Imperial Mills Ltd., Yarmouth, N. S., is closing its plant in Hamilton, Ont., and moving equipment to Yarmouth. The company is also building a quality-control laboratory in the carding department of the Yarmouth plant.

Delmarva Narrow Fabrics, Inc., Easton, Md.—C. W. Kleppinger, Jr., son of the president of the company, is secretary and manager.

Duplan Corp., Winston-Salem, N. C., has closed its weaving plant at Hazlewood, N. C.

Garrison Hosiery Co., Burlington, N. C., has started building a 5,000-sq.-ft. addition.

Lake Hosiery Mills, Inc., McBee, S. C., is a new hosiery plant producing men's and children's socks.

Matthew Moody & Sons Ltd., Terrebonne, Que., is building an addition to its plant.

Munsingwear, Inc., Minneapolis, Minn., is building a one-story factory in Montgomery, Minn. It will manufacture men's cotton briefs.

Old Fort Finishing Plant, Old Fort, N. C., is building a warehouse adjacent to the present plant.

Oneita Knitting Mills, Andrews, S. C., is planning a $50,000 expansion program. A warehouse will be built adjacent to the present finishing plant. Present storage space will be used for further expansion in the finishing plant, and new machines will be installed. The new warehouse will also serve as the shipping department.

Nu-Dye & Finishing Co., Paterson, N. J., has been licensed as a processor of Milium.

Paul Knitting Mills, Pulaski, Va., and **Hodges Knitting Mills,** Milledgeville, Ga., will combine operations in October. Paul Knitting Mills now manufactures boys' hosiery, and Hodges Knitting Mills manufactures men's hosiery. Under the new system, hosiery production will be at Hodges Knitting Mills and Paul Knitting Mills will handle the finishing operation.

Plymouth Mfg. Co., McCall, S. C., has been sold to Morgan Cotton Mills, Laurel Hill, N. C.

Reading Dyeing Co., Inc., Reading, Pa., is being liquidated. Much of the firm's machinery has already been sold.

Regent Knitting Mills Ltd., Montreal, Que., is building a two-story addition to its plant in St. Jerome. Costing $20,000, the building will be constructed of concrete block and will measure 42x96 ft.

Rudisill Mills, Inc., Lincolnton, N. C., has modernized all its spinning machines. The program was handled by Roberts Co., Sanford, N. C.

Sanco Piece Dye Works, Inc., Phillipsburg, N. J., is expanding its dyeing and finishing operation for the processing of man-made-fiber fabrics and blends. The company is installing 120-ft. tenter frames with 110-ft. enclosed housing with predryers and curing boxes.

Schrieber Silk Mills, Taylorsville, N. C., is planning a $250,000 expansion program. The plans include a 78x119-sq.-ft., two-story addition to the present plant, air conditioning, and materials-handling equipment.

Scottsboro Hosiery Co., Scottsboro, Ala., is planning a $140,000 expansion program.

Springs Cotton Mills, Chester, S. C., is building an addition to its Eureka Plant at Chester. It will house carding equipment. Adtional spinning equipment will be installed at a later date. The total cost of the building and machinery will be about $300,000.

Textiles, Inc., Gastonia, N. C., is consolidating the production of all single knitting yarns into one unit in the Mutual and Arlington buildings. The Mutual building will house the pickers, cards, drawing frames, and lap winders. All twisters will be moved out of the Arlington building, and an additional 15,000 spinning spindles will be moved in.

Verdun Mfg. Co., Somersworth, N. H., will move all operations to Woonsocket, R. I.

Victoria Cotton Mill, Rock Hill, S. C., is closing down after current orders are completed.

Waverly Dyeing & Processing Co., Philadelphia, Pa., has announced that it is going out of the package-dyeing business and will specialize in skein dyeing.

Woodside Mills, Greenville, S. C., has installed an air-conditioning system in the spinning room.

Textile World

CALENDAR

August

MIT, summer programs: Techniques in Textile Research, Aug. 18 to 22; Mechanics of Textile Structures, Aug. 25 to 29, Massachusetts Institute of Technology, Cambridge, Mass.

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 3

The Fiber Society, Inc., fall meeting, Queen Elizabeth Hotel, Montreal, Que., Sept. 9 & 10

Combed Yarn Spinners Association, annual meeting, The Cloister, Sea Island, Ga., Sept. 11 & 12

Sixth Canadian Textile Seminar, Queen's University, Kingston, Ont., Sept. 11 & 12

AATCC, Piedmont Section, Hotel Charlotte, Charlotte, N. C., Sept. 19 & 20

Textile Quality Control Association, fall meeting, Grove Park Inn, Asheville, N. C., Sept. 25 & 26

Northern Textile Association, annual meeting, Wentworth-by-the-Sea, Portsmouth, N. H., Sept. 25 & 26

October

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct., 1

National Cotton Council, Chemical Finishing Conference, Washington, D. C., Oct. 1 & 2

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 6 to 10

North Carolina Textile Manufacturers Association, Carolina Hotel, Pinehurst, N. C., Oct. 9 & 10

ASME-ASLE Lubrication Conference, Statler Hotel, Los Angeles, Calif., Oct. 13 to 15

American Society for Testing Materials, Committee D-13, fall meeting, Sheraton-McAlpin Hotel, New York, N. Y., Oct. 14 to 17

Textile Recorder International Textile Machinery & Accessories Exhibition, Belle Vue, Manchester, England, Oct. 15 to 25

1958 Cotton Spinner-Breeder Conference, sponsored by the Advisory Research Committee of Delta Council, Lubbock, Tex., Oct. 21 & 22

Southern Textile Methods & Standards Association, Clemson House, Clemson, S. C., Oct. 23 & 24

Alabama Textile Operating Executives, fall meeting on carding and spinning, Langdon Hall, Auburn, Ala., Oct. 25

Institute of Textile Technology, meeting of the Technical Advisory Committee & Board of Trustees, Charlotte, Va., Oct. 28 & 29

Carded Yarn Association, annual meeting, The Homestead, Hot Springs, Va., Oct. 28 to 31

AATCC, national convention, Hotel Conrad Hilton, Chicago, Ill., Oct. 30 to Nov. 1

November

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Nov. 5

Georgia Textile Operating Executives, fall meeting, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Nov. 8

Textile Seminar, sponsored by University of Georgia, Div. of Clothing and Textiles in Extension, Teaching, Research, Georgia Center for Continuing Education, Athens, Ga., Nov. 7 & 8

Narrow Fabrics Institute, annual meeting, Hotel Roosevelt, New York, N. Y., Nov. 17 to 19

December

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 3

1959

January

Plant Maintenance & Engineering Show, International Amphitheatre, Chicago, Ill., Jan. 20 to 30

March

American Cotton Manufacturers Institute, annual convention, Palm Beach Biltmore Hotel, Palm Beach, Fla., March 19 to 21

April

The Fiber Society, Inc., spring meeting, Fontana Village, N. C., April 29 & 30

May

Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., May 4 to 8

Cotton Research Clinic, sponsored by the National Cotton Council, Grove Park Inn, Asheville, N. C., May 12 to 14

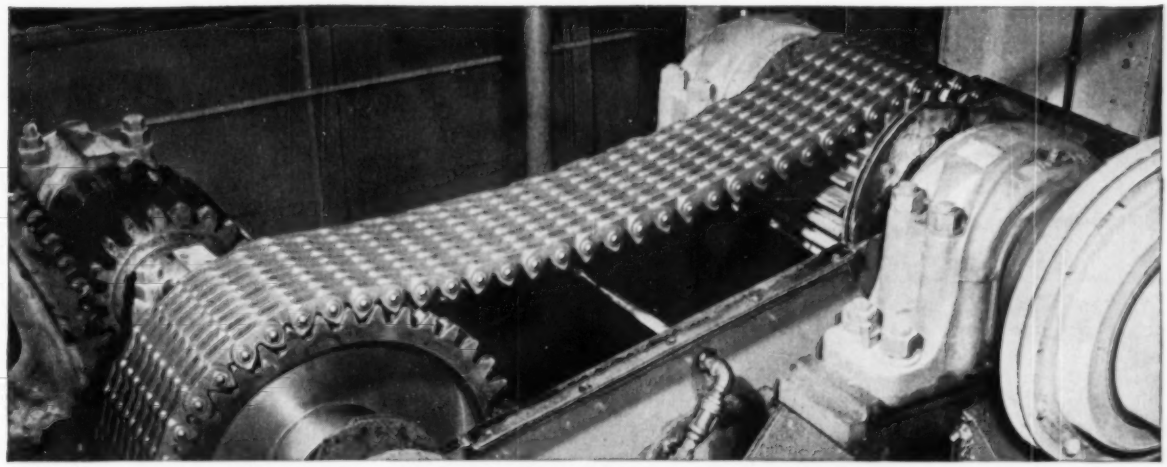
June

Material Handling Institute's Exposition, Public Auditorium, Cleveland, Ohio, June 9 to 12

1960

May

American Textile Machinery Exhibition, Atlantic City, N. J., May 23 to 27



HIGH SPEED. Traveling at speeds as high as 5000 fpm, silent chain drives readily accommodate the extreme peak loads without losing their better-than-98% efficiency.

How LINK-BELT silent chain drives survive industry's roughest requirements

Would your drives do as well?

On applications like these and scores more, no other type of drive is the equal of Link-Belt silent chain. Ask your Link-Belt office or authorized stock-carrying distributor for comprehensive 88-page Book 2425.

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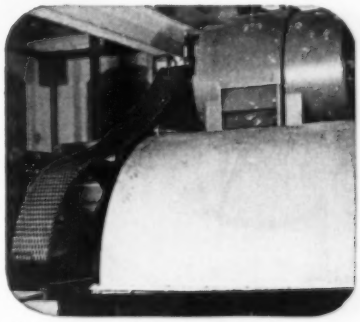
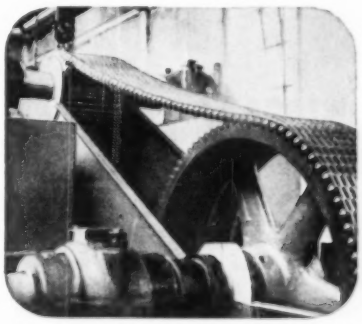
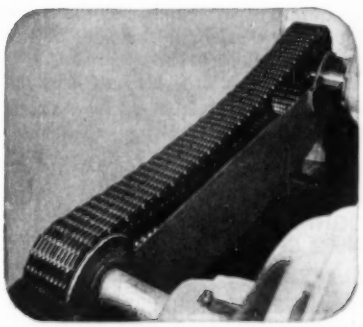
LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World. 14.679



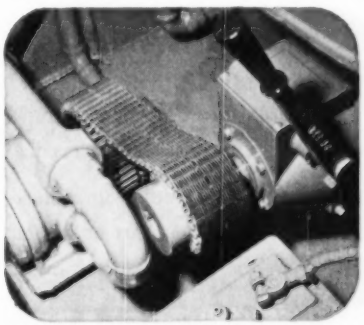
LARGE OR SMALL HP. On a 300 hp drive like this or at fractional hp, silent chain is always lower in ultimate cost.



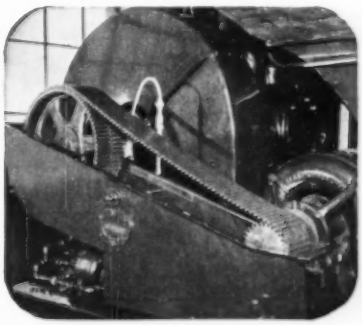
LARGE RATIOS. Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



ADVERSE OPERATING CONDITIONS. Heat, humidity and cold have little effect on Link-Belt silent chain drive performance.



LIMITED SPACE. Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



LONG LIFE. This drive is 16 years old and still going strong. Not unusual—many others have lasted twice that long.

For more data, write this page number on Reader-Service card. →

NEW IMAC TEX® LABELS STAY PUT... PEEL CLEAN!

"We wanted a dependable label to spotlight the permanent collar stays in our LEVI'S western shirts," reports Mr. Aleck Paul of Levi Strauss and Company. "We find that Imac TEX Labels do the job. They stay put under repeated flexing and handling."

New Imac TEX also simplifies labeling requirements . . . sticks to natural or synthetic fabrics. And it peels off without leaving a trace of adhesive residue.

Give new heat seal TEX a try — for positive labeling, multi-fabric stickability, clean peel-off. Easily applied with a hand iron, or as part of regular pressing operations. No moistening . . . no glue smears. See your printer, or write direct for sample sheets. Dept. TW-88, 44 Franklin Street, Nashua, New Hampshire

NASHUA Corporation

Letters From Readers

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

SHORTER WORSTED OPERATIONS POSE BLENDING PROBLEMS

Dear Editor:

With the advent of shorter operations in worsted spinning, the preparation of mixed shades has become increasingly more important. There is a considerable amount of melanged top used to produce gray mixtures.

Instead of a straightforward black-and-white blend, a proportion of melanged top can be added. This top can be about one-fifth of the total blend.

This addition helps make a more homogeneous mixture by breaking down fiber groupings. A proportion of solid gray in a blend along with the black and white to produce the mixture gray helps give greater evenness in the final product.

A proportion of dark gray and light gray along with the black and white achieves the same results. When melanged top is used with black and white, too great a percentage might lead to a deadening of the shade. A maximum of 40% melanged top is the limit if the essential character of the gray mixture is to be preserved.

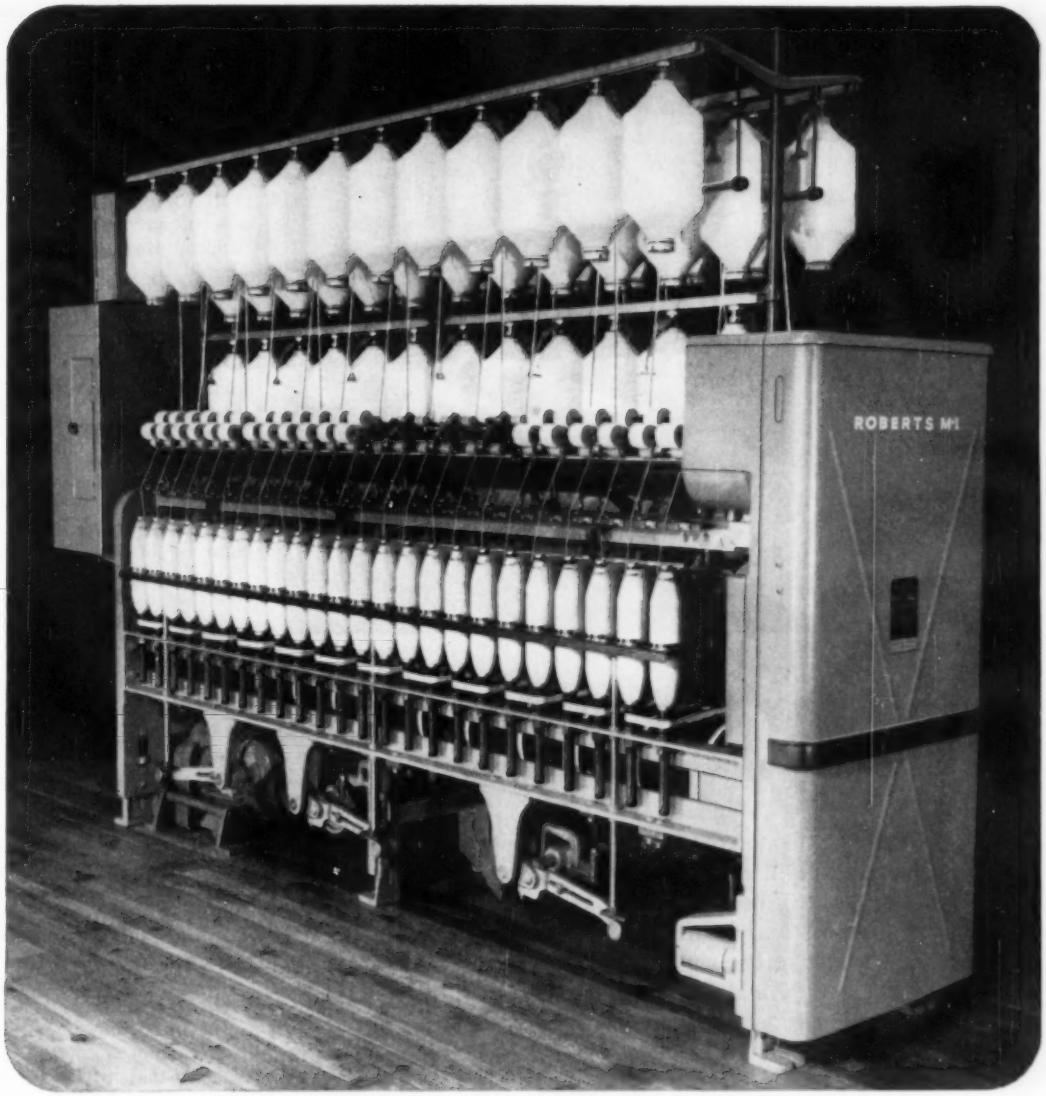
S. HEBBLETHWAITE

Bradford, England

LIGHT-LIFT FABRICS NEED SPECIAL SETTINGS

Dear Editor:

I have not seen any articles on setting up looms for weaving satins, serges, and other light-lift fabrics. These fabrics are being woven on



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

330 Roberts 25-inch Frames, with over 105,000 spindles, have been installed in American mills in the past two years. These Roberts Frames are very ruggedly built and exceptionally simple in design. Only tried and proven principles are used, which insure consistent high quality results.

Roberts M-1 Frames produce better yarns at higher front roll speeds and put more ounces of yarn on the bobbin. The ball bearing construction provides smoother operation plus reduced power use. Changes in draft, twist, lay, or speed are made very simply. Roberts M-1 Frames are available in 25-, 36- and 39-inch widths, for cotton, synthetics, worsted or blends, in short or long fiber lengths.

The benefits of big package spinning are available at

$32 to $40 per spindle

including freight and installation

ROBERTS COMPANY

SANFORD, NORTH CAROLINA

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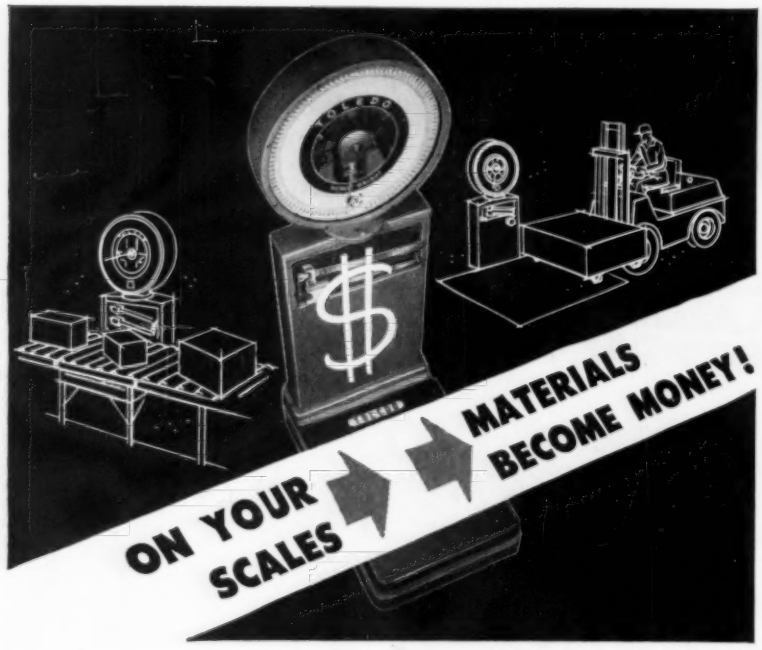
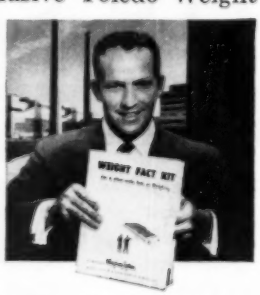


It will pay you to check now

on weighing efficiency in your plant!

For proper cost control, efficient weighing is a prime requirement. Weight records directly affect costs, quality, inventory control and customer billing. You can avoid weighing errors and inadequate weight data by placing the right scales in the right places . . . all properly integrated in a *plant-wide weighing system* to supply basic accounting records on materials received, transferred and shipped.

You can easily check up on the job your scales are now doing. Just ask for the exclusive Toledo Weight Fact Kit. A Toledoman will gladly explain how it will help you detect and correct weighing inefficiencies in your plant. REQUEST YOUR WEIGHT FACT KIT NOW. No obligation. Address Toledo Scale, 1409 Telegraph Rd., Toledo 12, Ohio.



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DIVISION OF TOLEDO SCALE CORPORATION

Headquarters for Weighing Systems

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dobby looms, and mill men will often overlook the importance of different settings for these fabrics.

These fabrics will not run efficiently if the whiproll is not set ¼ to ½ in. higher than the breastbeam. Raising the whiproll takes the strain off harness shafts that are raised.

If a satin with one or two shafts up out of an 8- or 10-shaft harness is woven, the shafts that are raised should have only enough tension to keep ends taut. Slack ends will weave improperly and cause floating ends and soft ends.

Set up 3x1 serge on four or eight shafts the same as satins. The timing or the closing of the shed should be ⅛ to ¼ in. early or before the ends cross on the front center.

Taffeta weaves run best and are set up with whirolls set at a level position on light qualities and a lower position on heavier qualities. This position can be best judged by how far the shed is off the lay.

CHARLES R. BATZER
Lancaster, Pa.

EMPLOYEES IDEAS ARE NOT ALWAYS COMPLETE

Dear Editor:

Much stress is placed nowadays on ideas and suggestions from employees. But many ideas are lost and their source is discouraged because management expects each idea to be complete and readily workable.

Management often looks for ideas and suggestions that take all the facts into consideration. But unfortunately, few employees possess all the information that is available to supervisors and management.

A suggestion may be sound in principle but need some additional details; it may need adaptations to fit conditions with which the originator is not familiar; its timing may be bad; or the suggestion may depend on financial matters that only management fully understands.

Mill management should be glad to discover an employee who thinks constructively. Training and additional knowledge will make his ideas increasingly useful. However, his talents may be lost if no allowance is made for shortcomings that in no way reflect on his capabilities.

All employee ideas and suggestions should receive full consideration. Though many of them may be incomplete or unworkable, they show that the contributors are interested and that they are doing some thinking.

GEORGE M. DODSON
Harrisburg, Pa.

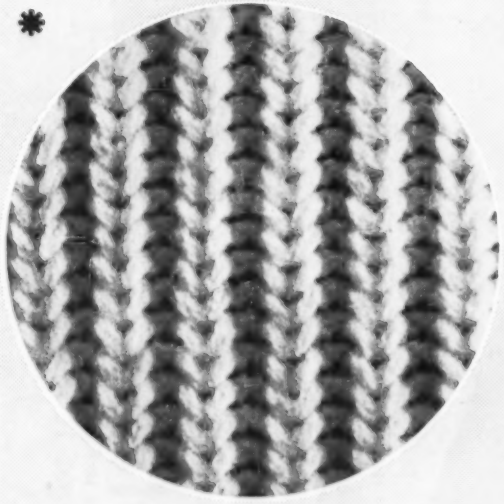
3

. . . . *three different bulkie stitches** are now available on . . . .

LEIGHTON BULKIE KNITTERS

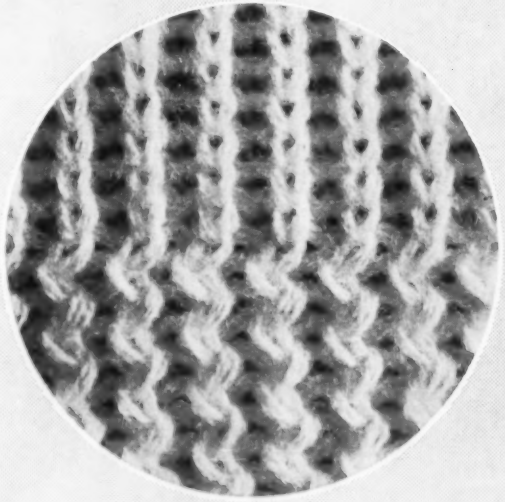
SIMPLY - By Chain Manipulation

*



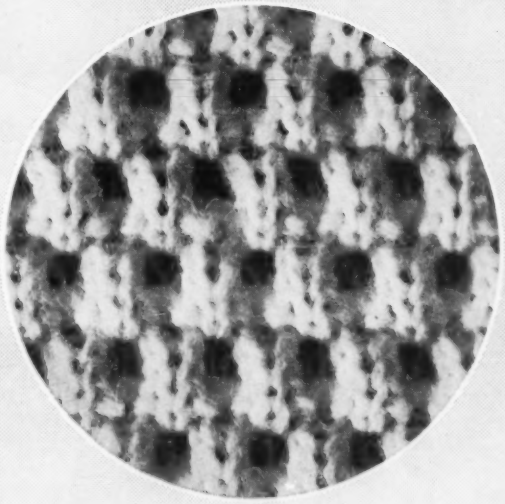
No. 1 Half Cardigan

Illustration above shows actual size stitch and is available in three color stripes. 2½ to 5 cut.



No. 2 Full Cardigan

Illustration shows actual size of full cardigan stitch with single needle rack.



No. 3 Nubb (Pineapple)

Illustration above shows actual size of stitch produced by tuck four and knit twice. Rack on the knit stitch.

LEIGHTON MACHINE COMPANY

. . . MANCHESTER, NEW HAMPSHIRE . . .

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES

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First introduced in 1928...

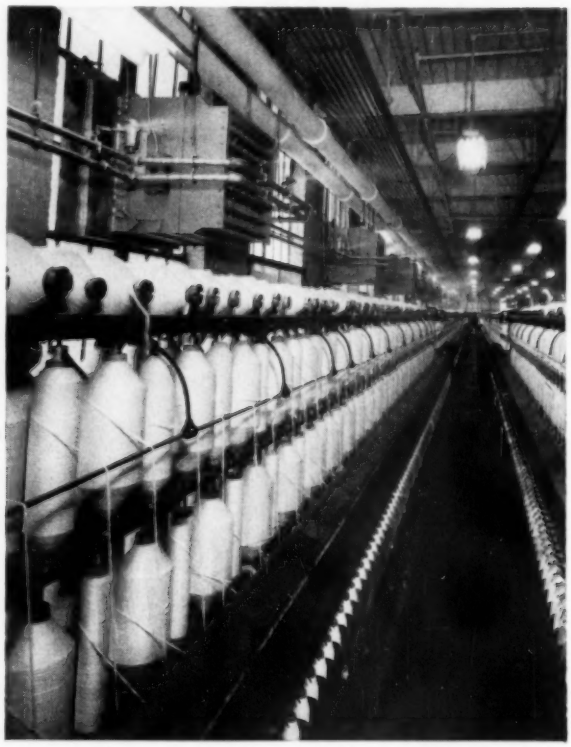
1928 was a banner year! That was the year Cannon Mills Company brought out its now-famous "towel ensemble" . . . announced *colored* hand and bath towels for the first time, as well. It was back in 1928, too, that Cannon also insured *finer* product quality with another innovation . . . AMCO Humidification.

In the 30 years since then, as Cannon has diversified its product line and added new manufacturing facilities, American Moistening Company has continued to work closely with Cannon in the installation of *carefully engineered* Amco Air Conditioning Systems.

Amco, of course, designs all types of systems — humidification; humidification in combination with cooling, as in a ductless evaporative cooling system; unit dry-duct systems; or central station air conditioning.

For expert advice, backed by many years of textile air conditioning experience, let an Amco engineer suggest a solution to *your* particular air conditioning problem. Naturally, there's no obligation.

Amco No. 6 Atomizer, one of many quality Amco components, produces an exceptionally fine, smoke-like spray. Its better performance and ease of maintenance make it a superior, automatically self-cleaning atomizer both for new installations and for replacements.



Amco ductless system of humidifying, cooling and ventilating installation in spinning room at Cannon Mills plant in Kannapolis, N. C.

AMCO

SINCE 1888

AIR CONDITIONING EQUIPMENT

AMERICAN MOISTENING COMPANY • CLEVELAND, NORTH CAROLINA

BRANCHES: ATLANTA, GA. • PROVIDENCE, R. I. • TORONTO, ONTARIO

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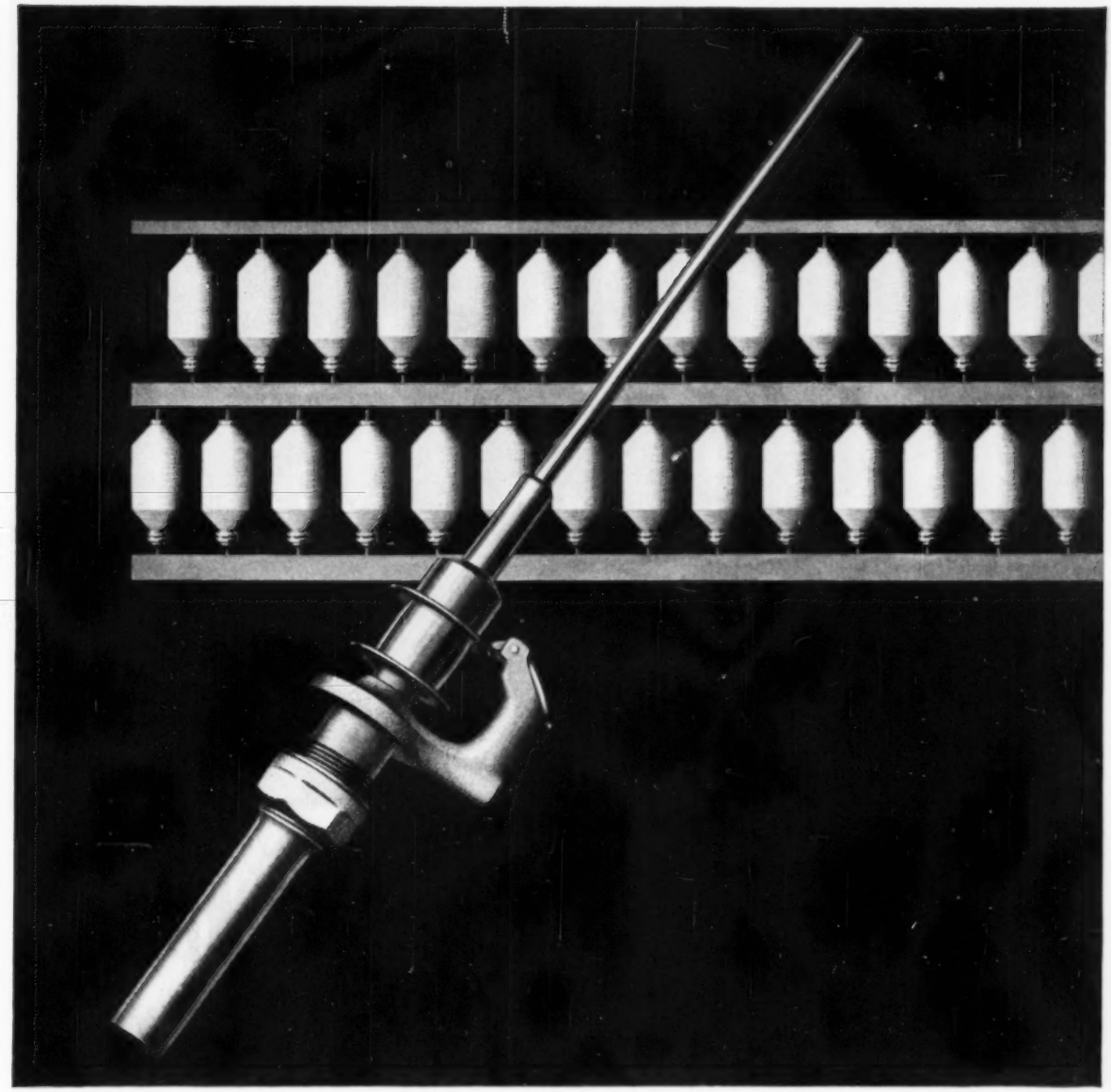

long-lasting lubrication lengthens bearing life

Premium-grade Spinesso has been specially formulated to solve lubrication problems for high-speed spinning and twister spindle bearings. It minimizes the formation of dark, sludge-like deposits. This means a *cleaner operation, better protection . . . less wear, less frequent lubrication.*

Free-flowing Spinesso gives positive protection particularly at critical start-up time — when fast, dependable lubrication is so necessary in preventing wear. Rusting and pitting, serious problems in the humid atmosphere of most textile mills, are effectively controlled by Spinesso.

Spinesso is also well-suited for other mill applications such as stitchers, counters and similar precision equipment. It can effect substantial savings by reducing handling and inventory and simplifying lubrication. Available in *three* viscosity grades. Complete technical data can be quickly obtained at your nearest Esso office in New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, the Carolinas, Tennessee, Arkansas, Louisiana, and the District of Columbia. Or write Esso Standard Oil Company, 15 West 51st St., New York 19, N. Y.

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ESSO RESEARCH works wonders with oil

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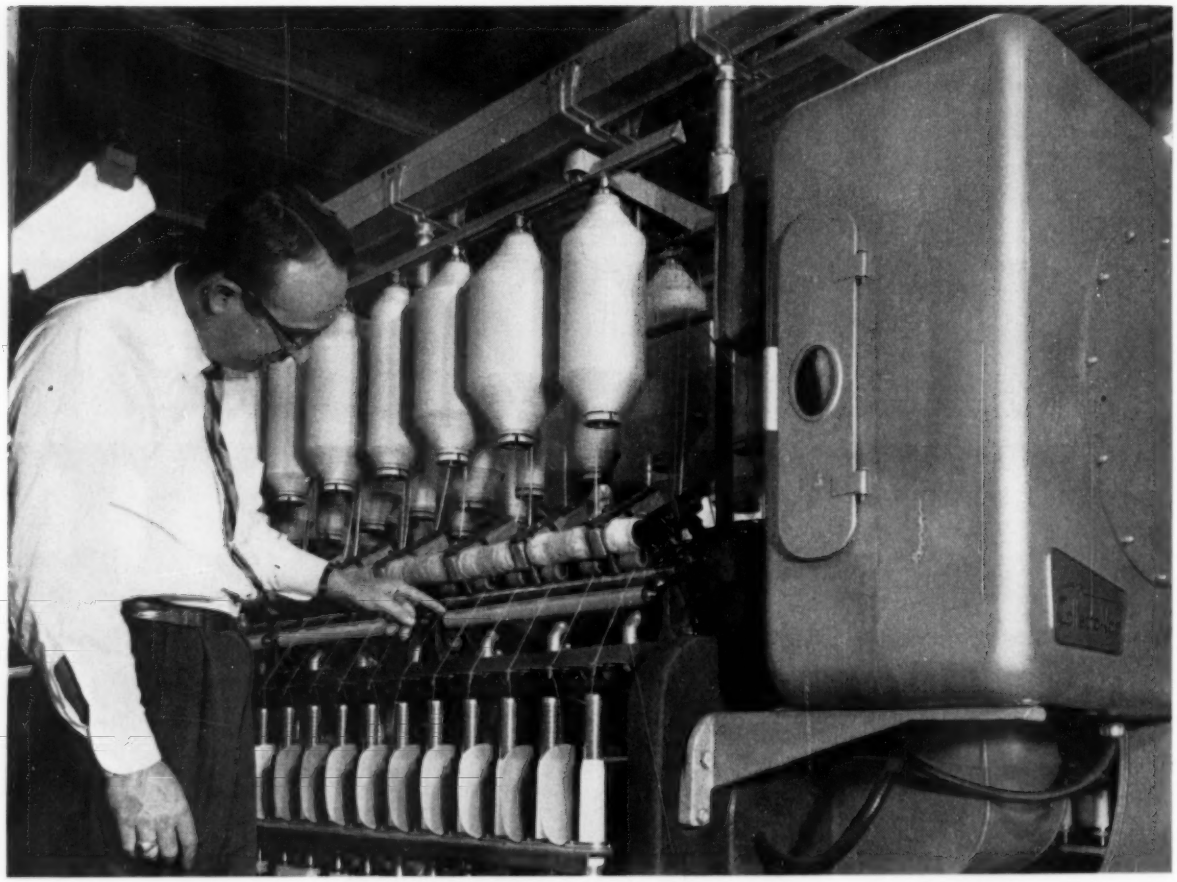

For suction cleaning with the pull that pays profits

GET THESE EXTRA-VALUE FEATURES WITH THE BAHNSON COLLECTO-VAC

EXTRA!
Effective, adequate suction pressures are maintained at the flutes for as long as 8 hours without removing accumulated lint from collection box.

EXTRA!
Flute replacement is not necessary because the anodized aluminum flutes never warp or crack, give limitless service.

EXTRA!
Quick access for maintenance. No need to disturb frame switches or take apart sections of collection box.

EXTRA!
Scroll type fan gives peak air handling, also cools the motor alley area by dispersing heat.

EXTRA!
Rugged steel collection box with rounded edges withstands bumps, knocks, has longer life.

Your Bahnson representative has all the details on Collecto-Vac's performance and application. Write Bahnson now!

Bahnson
COMPANY
WINSTON-SALEM, N. C., U. S. A.

ONE-SOURCE for Complete Modernization Equipment.

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New word in performance: Zefran®

zĕf-răn

(Zĕf-răn), n. 1.

Entirely new acrylic alloy fiber made exclusively by The Dow Chemical Company. Created to fill the market need for a *practical* luxury fiber. Characterized by *look* and *feel* of fine natural fiber. 2. *Processes* like a natural, performs like a synthetic. Most broadly *workable*, blendable fiber known. (*Limitless* constructions and face finishes.) Blended with wool, makes wool behave better than any lamb. With angora, seems like vicuna. Brings out best in cotton, opens a wide new world for rayon and silk. 3. Naturally white in color. 4. Fabrics are durable, resilient and comfortable—they dry quickly, are permanently pleatable and retain fresh appearance for life. 5. Available in 2, 3 and 6 denier staple.

Fabrics now being created by selected mills (for apparel only). For further information write The Dow Chemical Company, Textile Fibers Department, Williamsburg, Va.

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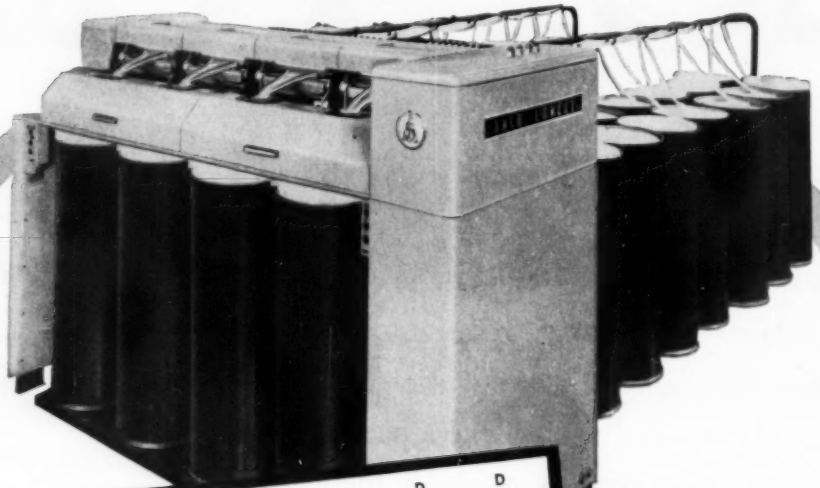
Obtain highest production of quality sliver by every standard --

-- PER DELIVERY
-- PER MAN HOUR
-- PER HORSEPOWER
-- PER SQUARE FOOT OF FLOOR SPACE

New VERSAMATIC

Drawing Frame by SACO-LOWELL



Mill	A	A	B	C	C	D	D
Stock	Carded	Carded	Combed	Combed	Combed	Combed	Combed
Process	1st Process	2nd Process	1st Process	1st Process	2nd Process	1st Process	2nd Process
Model Versa-matic	4 Over 5	4 Over 5	3 Over 4	3 Over 4	3 Over 4	3 Over 4	3 Over 4
Sliver Fed	52.5 gr.	54 gr.	55 gr.	120 gr.	60 gr.	62 gr.	55 gr.
Ends Up	8	8	8	4	6	6	6
Speed	300 ft./min.	300 ft./min.	260 ft./min.	216 ft./min.	216 ft./min.	250 ft./min.	250 ft./min.
Sliver Delivered	54 gr.	56 gr.	55 gr.	60 gr.	60 gr.	55 gr.	55 gr.
Tester	Saco-Lowell	Saco-Lowell	Saco-Lowell	Brush	Brush		
Variation	16%-19%	16%-19%	10%-13%	14%-16%	11%-13%		
Efficiency	92%-95%	92%-95%				82%	82%
Deliveries	16	16	60	32	32	12	12
Deliveries/Operator	32	32	30	32	32	24	24
Can Size—Back	18" x 42"	16" x 42"	15" x 36"	14" x 36"	14" x 36"	15" x 36"	15" x 36"
Can Size—Front	16" x 42"	16" x 42"	15" x 36"	14" x 36"	14" x 36"	15" x 36"	15" x 36"
Yards/Can	4000 yds.	4300 yds.	3300 yds.	2850 yds.	2850 yds.	3500 yds.	3500 yds.
Pounds/Can	31 lbs.	34 lbs.	25.9 lbs.	24.4 lbs.	24.4 lbs.	27.5 lbs.	27.5 lbs.
Draft	7.77	7.71	8.03	8.03	6.00	6.75	6.00
Pounds/Man Hour	1380 lbs.	1430 lbs.	1105 lbs.	1070 lbs.	1070 lbs.	772 lbs.	772 lbs.

THESE PRODUCTION FIGURES TELL THE STORY AND PROVE BEYOND DOUBT THAT VERSA-MATIC DRAWING FRAMES BELONG IN YOUR MILL

Contact your nearest Saco-Lowell office for complete information and a demonstration.

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60 BATTERYMARCH STREET, BOSTON 10, MASS.

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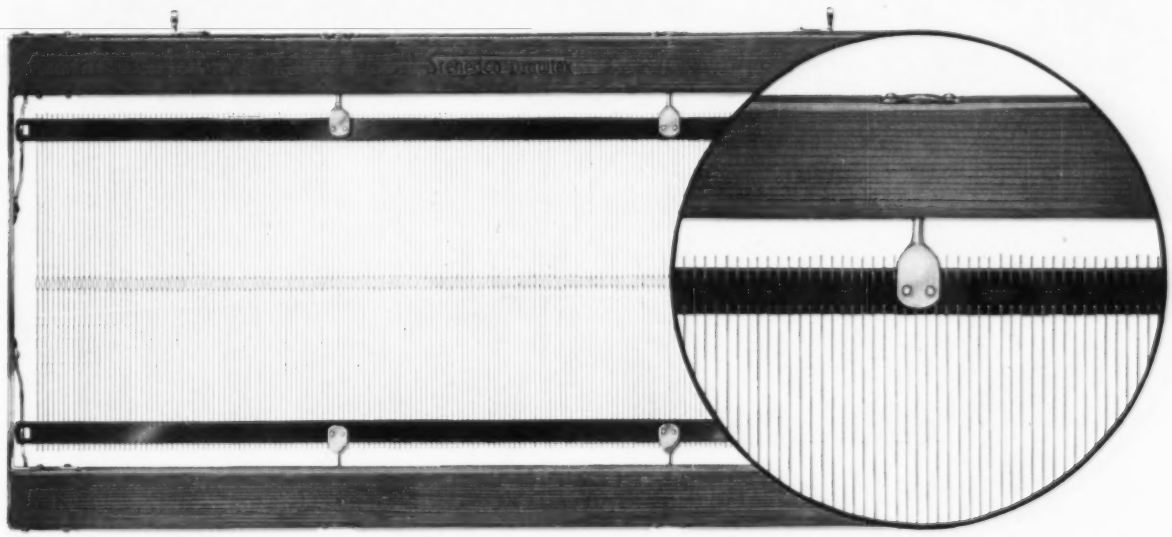
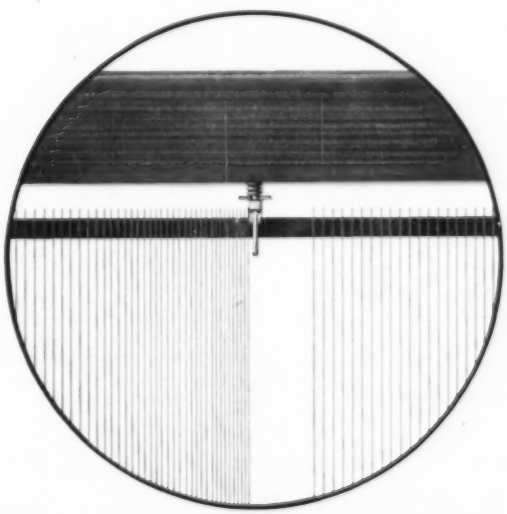
Stehedco
DRAWTEX HARNESS
IMPROVES EFFICIENCY AND QUALITY WITH PERFECT HEDDLE SPACING



Are your weavers and fixers handicapped by bunching of heddles at rod supports, as illustrated below?



Stehedco Drawtex rod supports allow completely free movement of the heddles. There is no obstruction to keep the heddles from finding their natural position on the rod. Therefore, warp streaks from heddle bunching are completely eliminated and down time to correct this condition is a thing of the past.

This is only one of many Stehedco Drawtex advantages. Ask our sales engineers to tell you all about them.

Stehedco
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PHILADELPHIA 32, PA.
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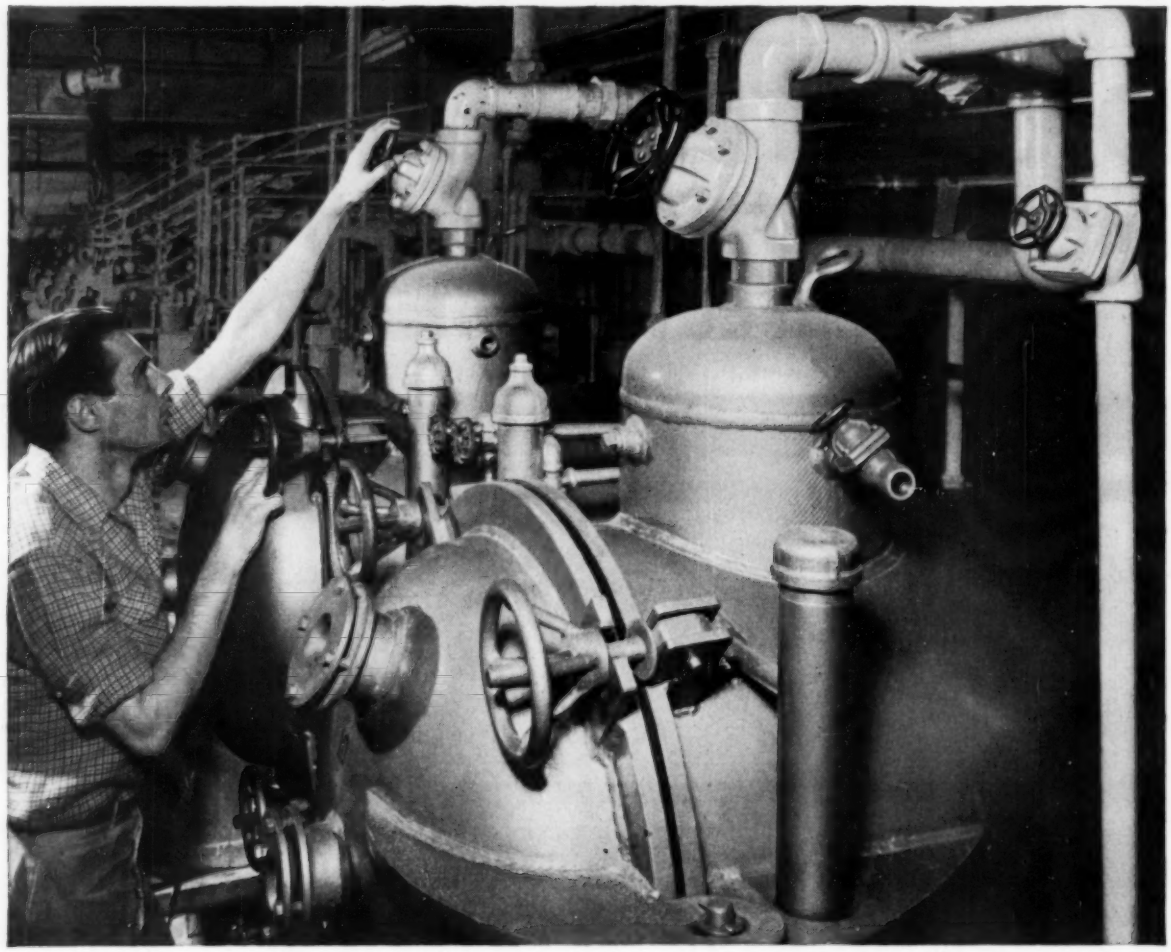
Packless valves assure Electron Products perfect processing



Crane diaphragm valves still hold tight after 18 months on 100-micron vacuum service

Electron Products Inc., Pasadena, Calif., forms special electronic parts of metalized paper. Processing—drying, deaerating, impregnating—is done under constant vacuum.

Valves, to hold the critical vacuum within a maximum leak rate of 100 microns for a 24-hour period during processing, had to be selected with care. Obviously not any valve would do. The choice—Crane diaphragm valves for high performance value.

After 18 months, these Crane packless valves continue to hold tight on this critical vacuum service for as long as 36 hours—and on occasion, over an entire weekend.

Crane packless diaphragm valves are widely used also in processing industries where absolute tightness is necessary to prevent leakage of volatile, corrosive and hard-to-hold fluids. Complete information is available from your Crane Representative. Or write for 24-page circular.

All about Crane diaphragm valves—patterns, body and trim materials, linings, 180 tested service suggestions, etc.—in Circular AD-1942. Send for it today.

CRANE VALVES & FITTINGS

PIPE • PLUMBING • KITCHENS • HEATING • AIR CONDITIONING

Since 1855—Crane Co., General Offices: Chicago 5, Ill.—Branches and Wholesalers Serving All Areas

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TOP SECRET

announced soon, this advanced
achine entirely new, will be recog-
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Automatic Winders for Rewound Filling

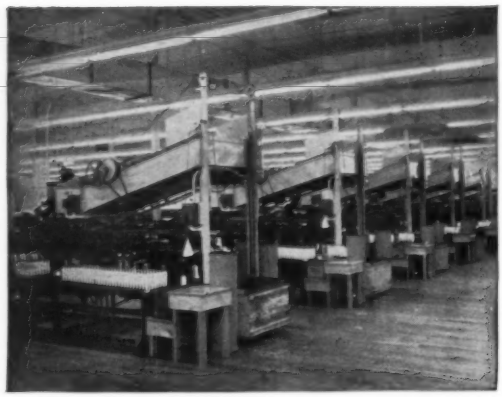
to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.



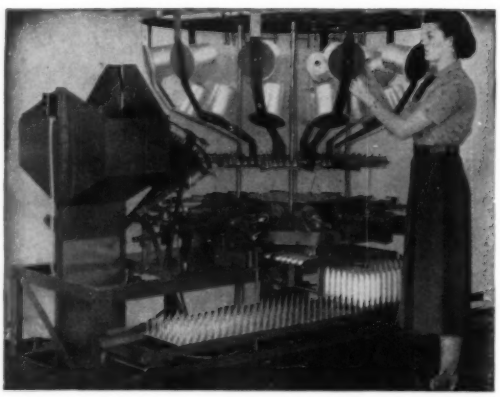
Abbott Traveling Spindle Automatic Quillers

For winding coarse cotton, worsted, woolen yarns, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

Abbott Model II High Speed Automatic Quillers OVER 10,000 RPM

For winding fine cotton, spun synthetics, filament rayon and nylon, etc. with automatic pinboard attachment or wide belt inspection conveyor, or bobbin stacker.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.

A CARTER call is a cut cost call . . . for you!

When a CARTER representative calls, he has more than a top-quality, precision-engineered product to offer.

He can give you the benefit of years of experience in solving traveler problems . . . he can call on the facilities of Carter's modern metallurgical laboratory for the development of special travelers to meet specific needs . . . and he can depend on an efficient organization to fulfill commitments to his customers.

His call—and his product—will save you time and money.

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Hugh Williams & Co. . . . . 27 Wellington St., E., Toronto, Ontario, Canada

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TRAVELER COMPANY
DIVISION OF A.B. CARTER, INC. MANUFACTURERS OF THE BOYCE WEAVERS KNOTTER GASTONIA, NORTH CAROLINA

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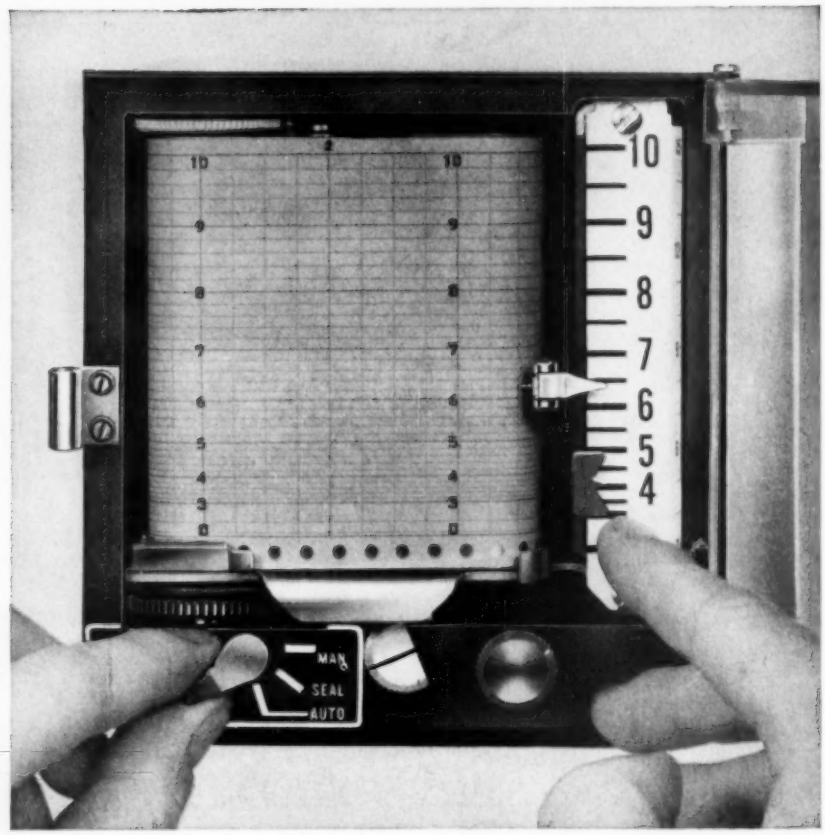
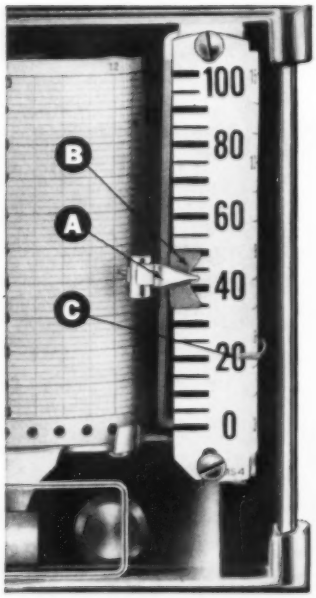
One of 38 Metagraphic Receiver Models you can choose from, all with only 5" x 5¼" panel. This model has single-knob, six-position transfer station for completely "bumpless transfer" in cascaded control systems.



BRISTOL METAGRAPHIC RECEIVERS:

"Easiest 'bumpless transfer' you ever saw"



Variable (A), set point (B), and valve position (C), all on same scale, make manual-automatic transfer easy.

That's what instrument men say after trying the Bristol Metagraphic Pneumatic Receiver—even in cascade control systems.

Just seal, match pointers, transfer. There's not a single value to read. That's because the Metagraphic gives you valve position, set point and measured variable *—all on the same scale.*

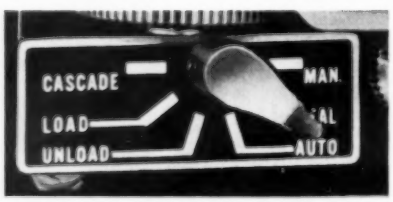
No finger-disconnects here! The Metagraphic is a true plug-in receiver—plugs and unplugs in 5 seconds with no loss of automatic control.

You can switch from indicator to recorder in less than 10 seconds, interchange many receiver models, change range simply by changing chart. Cuts down on costly reinstallations if process requirements are changed.

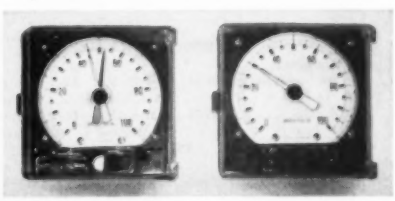
Write today for the complete Metagraphic story. Don't forget, Bristol offers the widest selection of miniatures on the market. (Full sized instruments, too.) The Bristol Company, 103 Bristol Road, Waterbury 20, Conn. B-18

BRISTOL TRAIL-BLAZERS IN PROCESS AUTOMATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



Six-position transfer station (enlarged view) for cascade service. Three-position manual-automatic station is also available.



Metagraphic Indicating Receivers have full 9-inch scale for easy reading; feature complete 10-second interchangeability with recorders.

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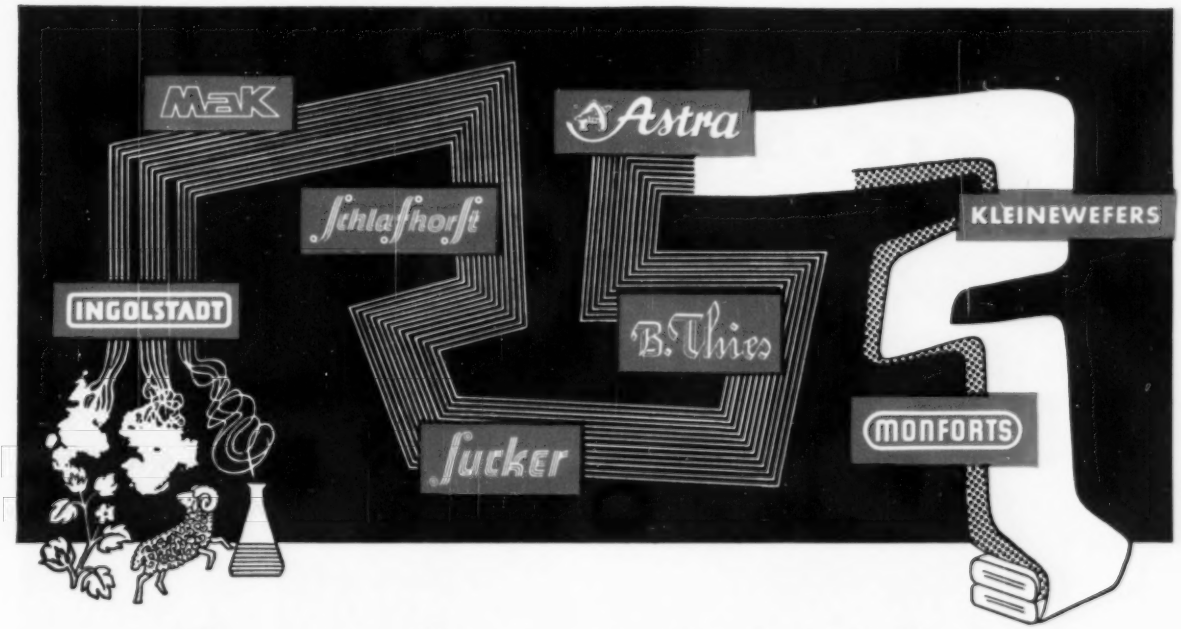

From the fibre to the finished fabric

UNIONMATEX *advises you, plans expertly and delivers*

textile machinery for your new projects, mill additions and mill modernisation

INGOLSTADT Spinning Machinery for cotton, artificial staple-fibre and worsted
MAK Card Sets · Self-acting Mules · Ring spinning Frames
SCHLAFHORST Machines for winding-warping and sectional warping
SUCKER Sizing Machines · Size Mixing and Cooking Installations
THIES Dyeing and Bleaching Plants for yarns and card-slivers of all kind
ASTRA Weaving Machines for cotton-, wool- and special fabrics e. g. feltcloths · Jacquard-weaving Machines
KLEINEWEFERS Calenders · Mangles · Printing-, Mercerizing machines · Continuous Bleaching and Dyeing Plants
MONFORTS Finishing Machinery · Measuring, Inspecting, Plaiting, Rolling and Doubling Machines for all kinds of cloth

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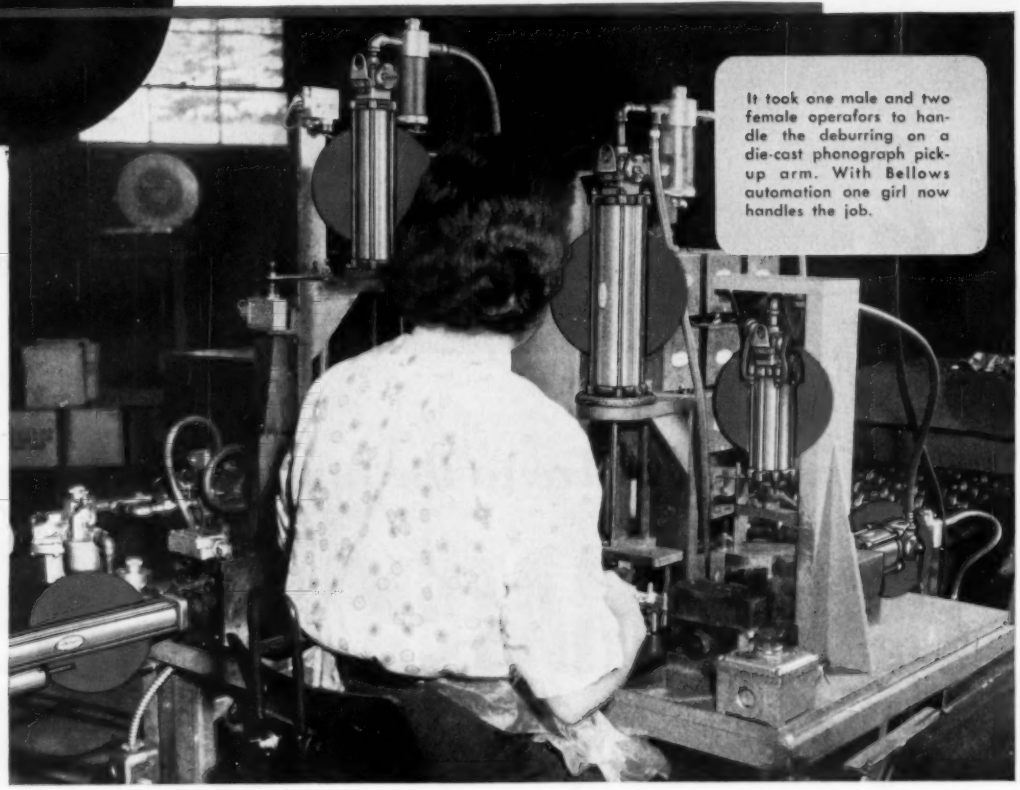
"SPOT-A-MATION"



It took one male and two female operafors to handle the deburring on a die-cast phonograph pick-up arm. With Bellows automation one girl now handles the job.

...a fast way to important cost savings

Any plant, no matter how large, consists of many "small plants" or separate manufacturing centers. Sometimes these separate manufacturing centers consist of no more than a single operation; sometimes they embrace a group of related operations.

A quick approach to important cost savings can be to "spot automate" these separate "small plants" with Bellows Controlled-Air-Power Devices.

These packaged work units can be quickly incorporated into existing equipment to make it fully automatic; can be used to interlock or program a number of machines or operations; or can form the key components in low-cost, tool room-built, special purpose machines.

A Bellows Field Engineer (there is one or more in every major industrial area in the United States and Canada) will be glad to discuss with you the ways you can use to "spot automate" your plant. No obligation, of course. Phone him (he's in the book under "The Bellows Co.") or write to us in Akron.

Would you like a copy of this booklet?

Write Dept. TW-858. Ask for the booklet—"Automation can fit into Your Picture."

The Bellows Co.

DIVISION OF INTERNATIONAL BASIC ECONOMY CORPORATION

AKRON 9, OHIO

1126B-1

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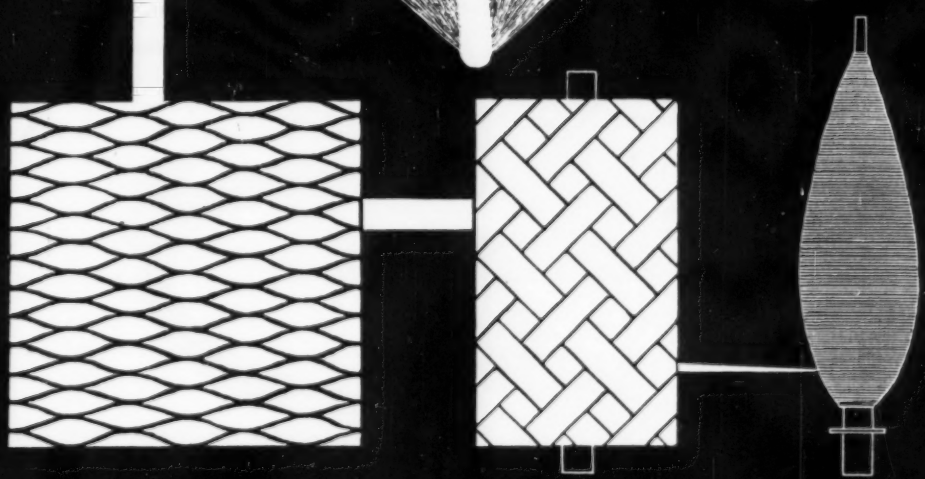
DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT / Donau

INGOLSTADT



SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE · WORSTED

Planning and supply of complete spinning plants based

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Spares for spinning machinery · Conversions of draft systems

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LET HERR ENGINEERS

Solve Your Spinning and Twisting Problems

For 6 oz. Wool and Dacron Blends. 5/16" Face Conical Ring. The most popular ring to produce light count yarns at high spindle speeds.

For Medium Counts. 3/8" Face Conical Ring for worsted, orlon, nylon, dacron and blended yarns of all types.

For Medium to Heavy Yarns. 43/64" Face large diameter Conical Ring. An excellent ring for spinning and twisting wool, synthetic and fiberglass yarns for carpeting, tire cord, woolens and novelty weaves.

Extra light weight bobtail flyer used on light denier yarns.

Take your problems to the HERR experts. You will get the correct answer faster than by experimenting. New fibers . . . new physical characteristics, require changes in processing. Herr Conical Ring and Traveler combinations can be provided to give you complete control of the yarn. You'll find it a lot easier to let HERR Engineers solve your twisting and spinning problems.

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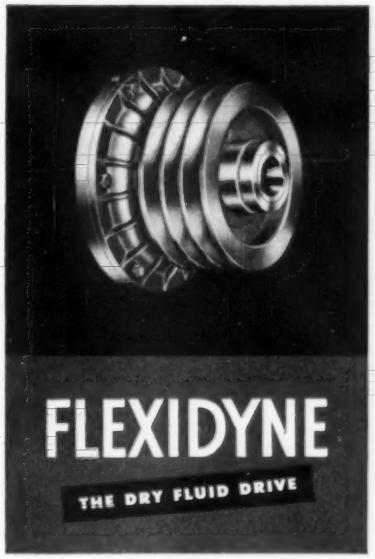
FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES



NEW DRIVE INSURES AMAZING SOFT STARTS FOR TEXTILE MACHINERY!

Flexidyne is an entirely new type of drive in which a dry flow charge of heat treated steel shot is employed to start loads *with fluid ease*. It accelerates quickly to full speed—and then operates *without slip at 100% efficiency*.

This revolutionary drive is being used with great success in:

- cotton cards
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- twisters
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- cloth rolling heads
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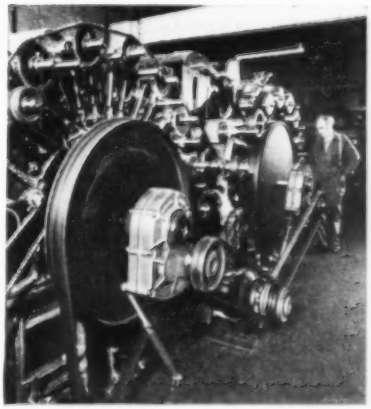
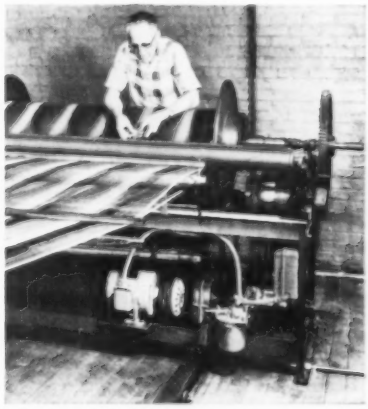
- and for synthetics, too

Ask your Dodge Transmissioneer for the full story. Or write us for Bulletin A-653.

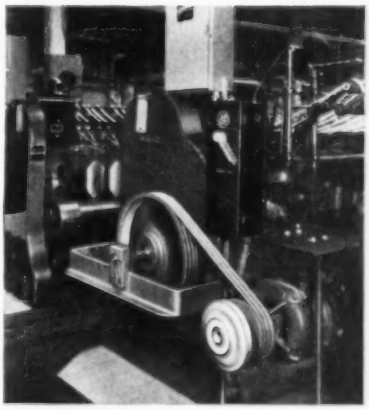
CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."



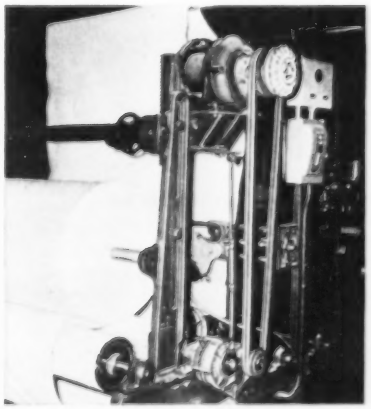
WOOL CARDS



LONG RAIL BEAM WARPERS



ROVING FRAMES



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The Cocker Multiple Beam Tricot Warper

Head Diameters up to 32″

Versatile

2 – 21 inch beams
1 – 42 inch beam
1 – 55 inch beam
1 – 50 inch Raschel beam

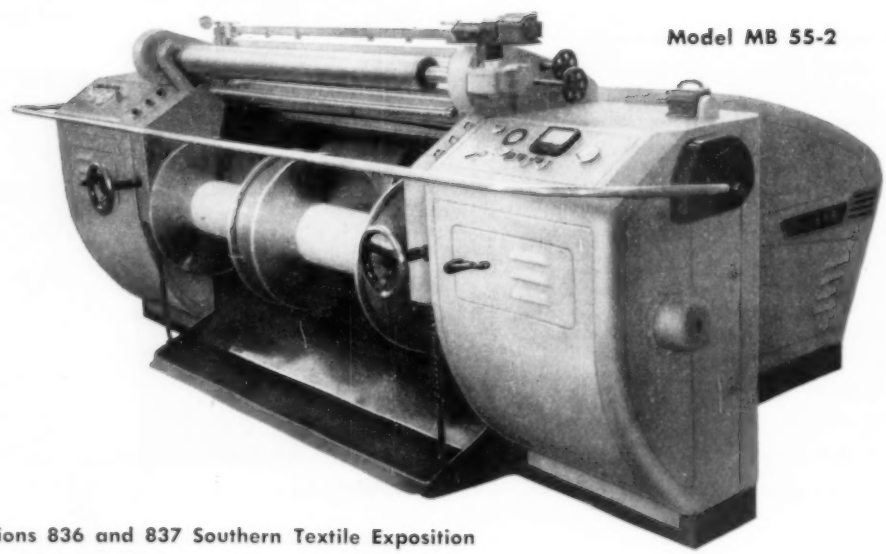
Fast

Normal sustained operating speeds up to 600 YPM.

Convenient

Individual controls are within full view and easy reach of operator. Simple changeover from one set-up to another. Has all of the most modern features and safety devices.

Model MB 55-2



Let us give you full information on this revolutionary Tricot Warper.

In Canada and New England
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Montreal Canada, Melrose 1-3751

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THE LEADER AROUND THE WORLD
COCKER Machine and Foundry Co., Gastonia, N. C.

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WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

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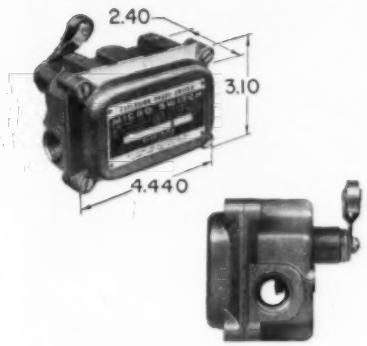
MICRO SWITCH Precision Switches

Compact high capacity UL listed explosion-proof switches



There is a wide variety of explosion-proof switches in the MICRO SWITCH precision switch line to help you boost productivity of equipment

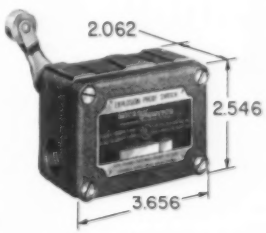
Here are a few examples of the many variations in mechanical and electrical characteristics, housings and actuators which are available in MICRO SWITCH explosion-proof switches. All feature rugged construction in sturdy housings, with a choice of mounting positions. Information on these precision switches is available from the MICRO SWITCH branch office nearest you.

Listed by Underwriters' Laboratories for use in hazardous atmospheres Class 1, Group C and D; Class 2, Groups E, F and G.

NEW

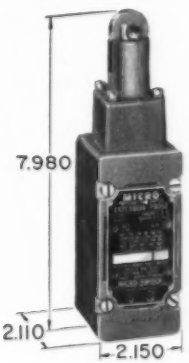
"EX1" SERIES

Series "EX1" switches have a conduit opening at both ends of the housing. This permits through wiring, which saves costs and space and improves appearance of the installation. Series "EX1" switches are available with four types of basic switches, with variations in electrical ratings, size of conduit openings and circuit arrangements. The switch illustrated has two ½-inch 14NPT conduit openings; capacity is 15 amps. 125, 250, 460 vac; ½ amp. 125 vdc; ¼ amp. 250 vdc. Contact arrangement is SPDT. Request Data Sheet No. 129.



"EX" SERIES, "AR" TYPE

Series "EX" switches have single conduit openings. They are available in a complete selection of actuators. There are 27 variations of the "AR" type alone, representing a wide choice of operating characteristics, electrical capacities and contact arrangements. This "EX" series switch is designed for cam or slide operation. Actuator is operated by clock-wise rotation, and it is adjustable through 360°. The roller is of non-sparking silicon bronze. Send for Catalog 83.



"ML-E1" SERIES

The "ML-E1" series of explosion-proof limit switches meets a wide range of requirements. For example, there are two-circuit double-throw double-break switches with a rating of 10 amps. 120, 240, 480 or 600 vac; 0.8 amp. 115 vdc; 0.4 amp. 230 vdc. The roller plunger actuator is for cam or slide operation. Sealed head can be rotated 90°. Wide choice of other actuators. Send for Catalog 83.

"ML-E1" SERIES

This series "ML-E1" switch has a roller lever actuator which can be positively locked at intervals of approximately 0.4° (870 positions). The actuator can also be adjusted to actuate the switch in the clockwise direction only, the counter-clockwise direction only, or in both directions. The head assembly can be faced in any of four directions and the roller arm may be reversed on the head. Send for Catalog 83.

MICRO SWITCH . . . FREEPORT, ILL.
A division of Honeywell
In Canada: Honeywell Controls, Ltd., Toronto 17, Ontario

The two-word name MICRO SWITCH *is not a generic term. It is the name of a division of Honeywell.*

Look for the name of MICRO SWITCH *Authorized Distributors in the Yellow Pages*

Honeywell
MICRO SWITCH PRECISION SWITCHES

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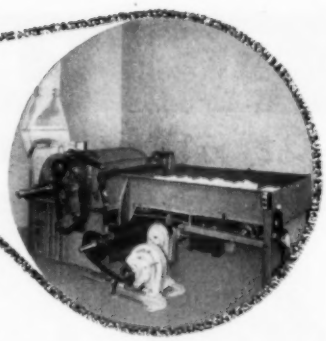
NON-WOVEN FABRICS

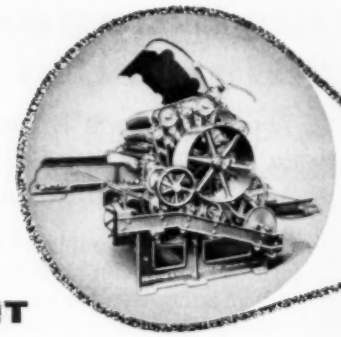
FROM BALE TO FABRIC

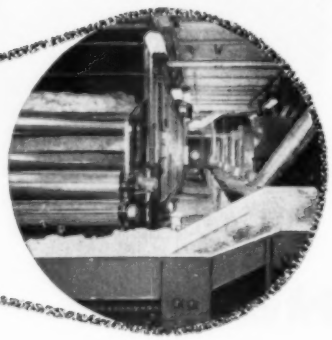
WITH

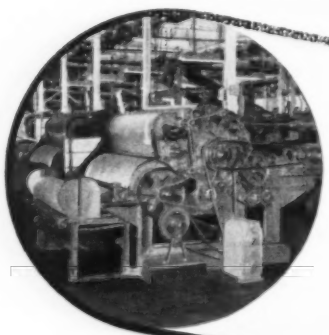
Proctor®

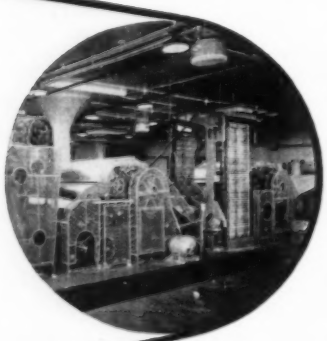
EQUIPMENT











Successful non-woven fabric manufacturers today recognize the garnett as the prime web forming apparatus for making top quality non-woven fabrics without sacrificing high production. By choice of type or arrangement of these garnetts, a complete range of non-wovens can be made, that is, parallel fiber array, cross lapped, or isotropic.

Production now being obtained on Proctor web forming equipment ranges from 100 to 700 lbs/hr in widths of 60" to 96", depending on the desired requirements of the specific material being processed.

Proctor can supply complete non-woven production ranges for handling natural and synthetic fibers from the initial opening and blending through the required pre-carding and final web formation.

Non-woven fabrics are an ideal end use for many reprocessed fibers. Proctor has a complete line of equipment for waste reclamation suitable for upgrading and preparing fibers for the manufacture of these fabrics.

A wide range of drying and curing machinery is also available, engineered to handle the individual mill's fabric construction and bonding agent.

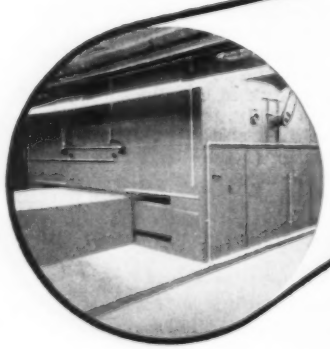
Auxiliary slitting and batching machinery can be furnished to complete the range.

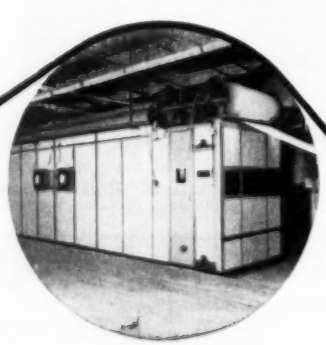
PROCTOR & SCHWARTZ, Inc.

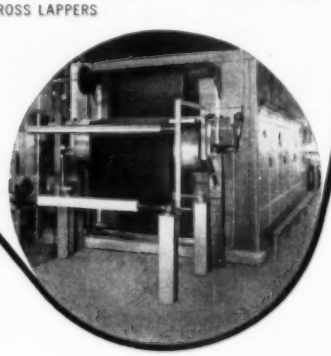
PHILADELPHIA 20, PA.

Proctor Equipment For Manufacturing Non-Woven Fabrics . . .

- BALE BREAKERS
- PICKERS
- SHREDDERS
- REPROCESSED FIBER GARNETTS
- BLENDING FEEDS
- BLENDING BINS
- CARD AND GARNETT FEEDS
- WEB FORMING GARNETTS
- CROSS LAPPERS
- DRYERS
- CURERS
- SLITTERS
- WINDING HEADS







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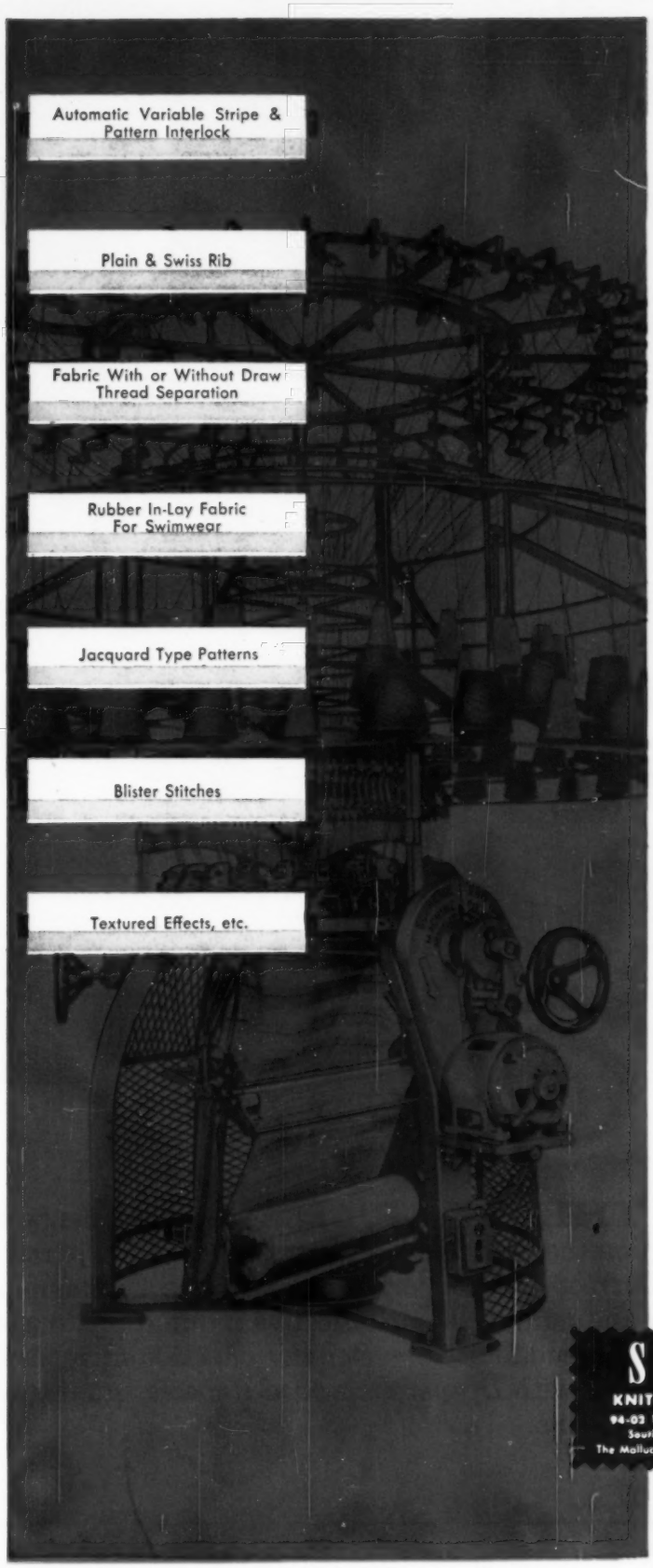
Automatic Variable Stripe & Pattern Interlock
Plain & Swiss Rib
Fabric With or Without Draw Thread Separation
Rubber In-Lay Fabric For Swimwear
Jacquard Type Patterns
Blister Stitches
Textured Effects, etc.

Now Knit A Complete Line Of Interlock-Rib Fabrics With One Machine— SUPREME Model SAI-PP

In versatility and output, this new Supreme model is practically a one-machine knitting mill. With it, you can produce a tremendous range of rib and interlock fabrics. You can switch from one to another quickly and simply to meet changing market opportunities.

Years of Supreme research and engineering development are embodied in this machine... *the first multiple-feed, fancy rib and interlock striper with a stationary bobbinrack and dogless construction.*

• Dual raceway in dial makes possible the production of a tremendous variety of interlock and patterned fabrics with a "birdseye back".

• **Standard 30" diameter model, contains 24 cylinder feeds including 12 individually and automatically controlled four-color striping boxes, 24 three-position pattern wheels and 24 automatically controlled cylinder cams for knit, tuck and welt positions. Knit, tuck and welt positions also available on all dial feeds.**

For more details send for this new bulletin or contact Supreme for a demonstration.

EXPANDING PRODUCTION
ACCELERATING DELIVERY

SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom
The Malluck Co., 914 East 4th Street, Charlotte, N. C.

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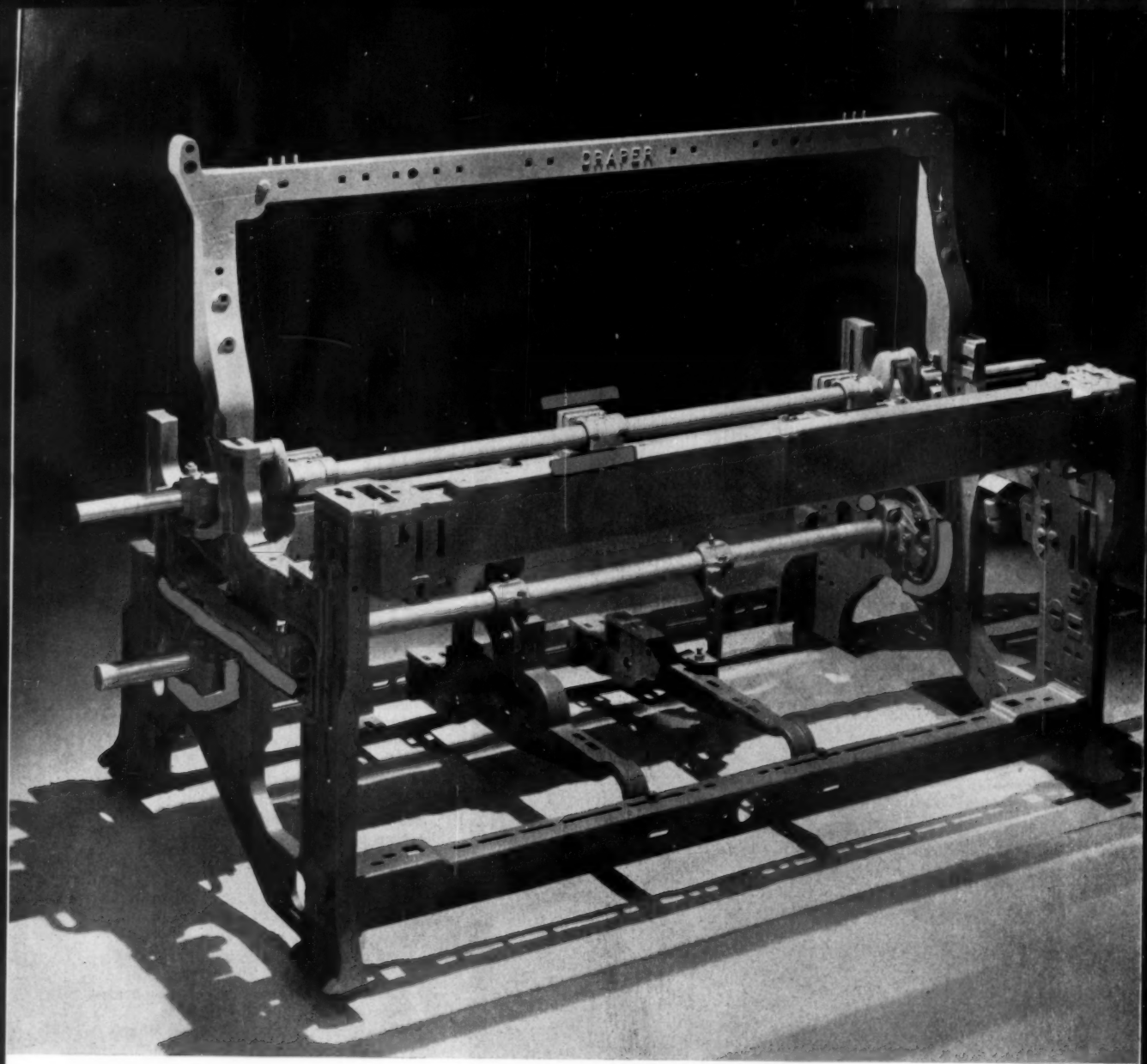
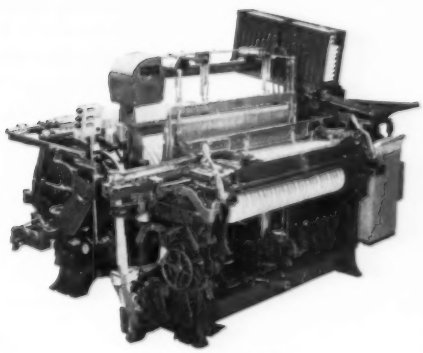


RIGHT FROM THE START! Since loom efficiency is, to a large extent, dependent on the individual performance of many parts, it is important that they be correct and properly applied. Each Draper part and mechanism is designed and built with one objective in mind . . . to give the maximum in service and dependability. — *Regular checks and replacement of worn or mongrel parts,* with *Draper Improved Repairs,* guarantee getting the most out of your looms.

Illustrated are but a few of the many DRAPER IMPROVED REPAIRS *which enable you to produce more goods for less cost.*



DRAPER MODEL X-2
HIGH SPEED LOOM

DRAPER CORPORATION

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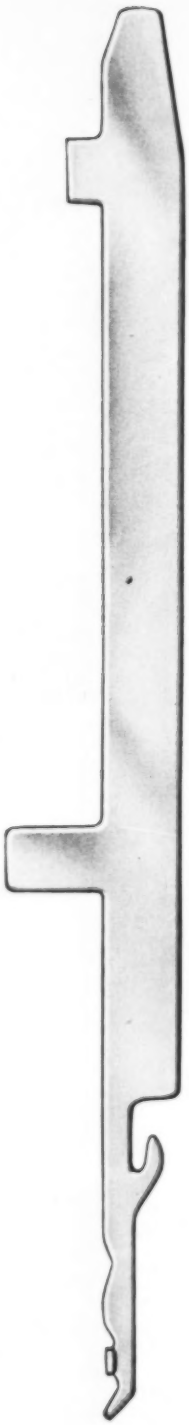

Performance plus . . .

Arrow Flat Stock is preferred by leading manufacturers of circular and flat-knit fabrics because they get dependable performance — *plus* an accumulated knowledge of flat stock design, *plus* service by representatives who understand flat stock behavior, *plus* prompt delivery from stock in Reading, Pa., Asheboro, N.C., and Manchester, N.H. The variety of Arrow Flat Stock is practically unlimited . . . but the quality never varies. Let us quote on your requirements.

Wire Products Division
TEXTILE MACHINE WORKS • READING • PENNA.
In the South: Asheboro, N.C. In the North: Manchester, N.H.
Builders of Textile Machinery Since 1900

Arrow FLAT STOCK

The "Reading" CK-A Circular Knitting Machine • The "Reading" Tricot Machine • The "Reading 100" Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned Outerwear Machine • The "Reading" Braiding Machine • Textile Spring-Beard Needles • Arrow Latch Needles

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Plan 1959 Now for Greater Profits

Most observers seem convinced now that the latter part of this year and all of next year will be a much better business period than 1958 has been so far. Some important branches of the textile industry have already seen a turn for the better, and the tempo of the improvement should step up as summer ends.

One thing that usually happens in a period of improving business after a recession is that profits increase rapidly with increased production and sales. Costs are usually trimmed as much as possible when business is bad; and when business improves, profit percentages rise until prices begin to level off or costs increase again.

That's where the textile industry seems now—poised for a period of better production and sales, and considerably better profits.

Time To Improve

But many mills will not make the profits they could make, and their profit period will not continue as long as it could, because their costs are too high.

At a Senate Subcommittee hearing on the textile industry last month, it was pointed out that the textile industry is, as a whole, in a serious state of obsolescence. Equipment in almost every manufacturing process is seriously out of date in many mills.

Obsolete equipment is one of the quickest and surest ways there is to put a pinch on profits. Everyone in the textile industry has seen cases where mills were liquidated because the machinery was "on the floor."

Now, at the beginning of a profit period for the industry, is an opportune time for mills to step up the profitability of their equipment.

Plan Now for Profits

In October, the editors of Textile World will publish a major editorial section devoted to the opportunities for modernization at different textile processes.

For example, mill case histories show that at the slashing process a mill with old slashers can increase productivity per manhour about 100% by replacing the old slashers with new ones now on the market. Or it can increase productivity better than 60% by rebuilding the old slashers and equipping them with up-to-date drives, controls, etc.

Such dramatic cost-cutting will not hold true for all mill processes; but it is being exceeded in other processes, full-fashioned knitting for example.

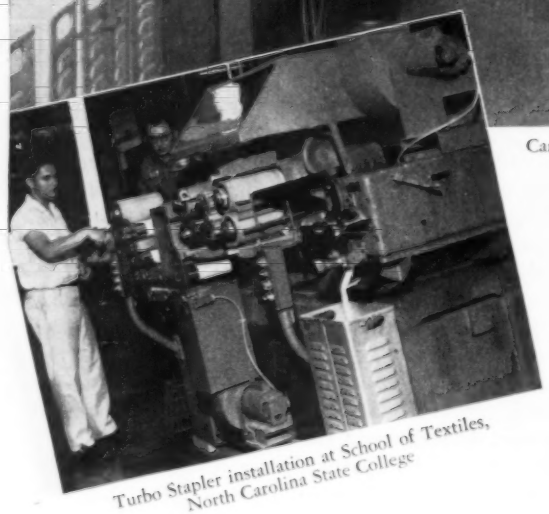
The chances for spectacular improvement are widespread. For several weeks Textile World editors have been probing the industry to find out exactly what is "modern," how obsolete much of the industry equipment is, what many mills are doing to update their processes, and the gains being realized in increased productivity and lower costs.

In October we will publish the results. Some of them are astonishing.

The year 1959 undoubtedly will be a more profitable year for mills than 1958 has been. But profits for many mills could skyrocket if they began now to plan and equip for *modern* operation.

O. M. Thomas

Caron Spinning Company, Robesonia, Pa., has seven Turbo Staplers.



Turbo Stapler installation at School of Textiles, North Carolina State College

3 PROGRESS REPORTS on Tow Processing Via the Turbo Stapler

Experimentally

Most fiber producers are working with Turbo Staplers to achieve new fiber effects with synthetic tow. Turbo offers a complete "laboratory" to check out new ideas in man-made fibers. Adaptable to all acrylic fibers, the Turbo Stapler is a practical laboratory tool for enhancing basic fiber properties.

Educationally

Leading textile schools are using the Turbo Stapler for practical classroom demonstration. Students quickly learn the few simple adjustments necessary to regulate the degree of heat-stretch, control the degree of crimp, and control staple length.

Let us discuss the mill-proved advantages of the Turbo Stapler with you. Call or write today.

Commercially

The amazing success story of Turbo High Bulk for sweaters is best told in these words: every day 90% of the high-bulk sweaters sold are knitted from Turbo High-Bulk Yarn. Synthetic fibers processed by the Perlok System on Turbo Staplers spin into yarns of exceptional evenness with a perfect balance of loft and bulk. More than 50 leading spinners are Turbo Stapler-equipped.

TURBO MACHINE COMPANY

Makers of Precision Heat and Steam Setting Machines, Crimpers, and Tow Processing Equipment

LANSDALE, PENNA.

Southern Representative: Parrott & Ballentine, Greenville, S. C.

TURBO SINCE 1929

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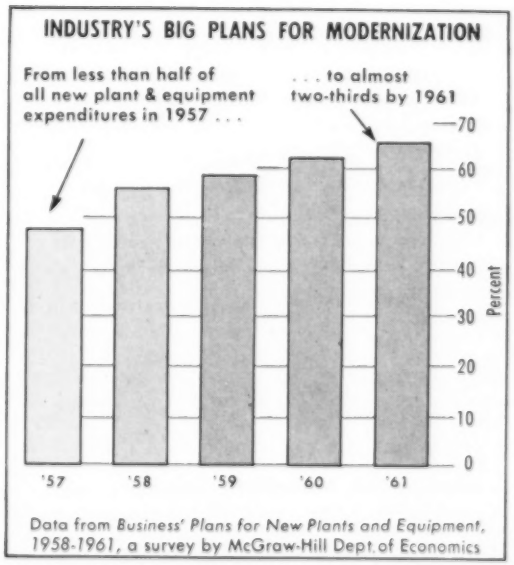
PLAN '59

A MESSAGE TO AMERICAN INDUSTRY

Modernize Now — For Growth and Profits

The biggest challenge facing American industry today is that of thoroughly modernizing its plant and equipment. This is the test period for companies to prepare for success — or failure — in the '60s. Success depends decisively on one key policy — modernization, for growth and profits.



The problem of business recession is fading. Sales and industrial production are moving up again, slowly. Business is swinging back into its normal course. This is growth, not retreat and recession. If the recovery takes us back to the normal growth trend, industrial production will be up 15% to 20% by 1960.

But how can we get this growth in production without the plague of price inflation that has blighted our economy in recent years? And, of fateful consequence for the individual business firm, how can it keep its costs down enough to make a decent profit — something a very large share of American companies are not doing today?

This is the new challenge that confronts business as the recession is left behind.

Nature of the Challenge

The recent record on costs and productivity is not reassuring. Since 1947 wages in manufacturing have risen 68%, while output per manhour has gone up 32%. This is a dismal record for a nation that has prided itself on

gains in industrial efficiency. Clearly, if we are to avoid continuing inflation, labor must key its wage demands more closely to productivity increases. But clearly, also, we must do far better in raising output per manhour. Otherwise, industry cannot hope to offer stable prices, and still make a profit.

What, then, is the answer? It is modernization of plant and equipment, the replacement of obsolete producing facilities with new and more efficient machinery and buildings. Only in this way can industry hope to increase production, hold down costs and make a good profit showing in the years of growth that lie ahead.

Industry's Answer

The chart on the preceding page shows how American industry is buckling down to the task of modernizing its facilities over the next four years. It is planning to replace old equipment with new machines that will raise output per worker not just 2% or 3% a year, but more like the 5% annual gain in productivity that this nation achieved in the years following World War I.

Since World War II we have had to contend with shortages of capacity and materials that have held back the job of raising productivity. But today the machines and techniques are available. And industry is getting set.

A broad sample of manufacturing companies surveyed by the McGraw-Hill Department of Economics earlier this year reported these plans: **In 1958, expenditures for modernization will rise to 56% of total investment in new facilities — compared to 48% in 1957. And this emphasis will increase until by 1961, expenditures for replacement and modernization account for two-thirds of all capital spending by manufacturing companies.** In dollar terms, manufacturers will spend more on modernization in each of the four years 1958-61 than in any previous year except 1957.

Can It Be Done?

These are big plans. Can they be carried out? Is it too visionary to hope that after a decade of expansion, industry can now find the outlets for huge amounts of capital investment in the area of modernization? The answers are important to business and the nation, because on this new wave of modernization depends our hope of holding down costs and prices, and also the prosperity of the vital capital goods industries — generators of boom and bust in our economy.

To ensure that industry gets the answers, McGraw-Hill's 34 business publications are now starting a coordinated effort — the largest editorial effort in the history of our company — to find, report and publish the opportunities for modernization at a profit, in the fields we serve. These special reports will begin in late September and will run through November, with appropriate coverage for the specific needs of each field. We are proud to share with industry the responsibility for making sure that no opportunity is overlooked in the drive to modernize now for growth and profits.

This message was prepared by the McGraw-Hill Department of Economics as the first step in our company-wide effort to report on opportunities for modernization in industry. The Department is also preparing a longer report, on modernization as a national problem, for publication in October.

Permission is freely extended to newspapers, groups or individuals to quote or reprint all parts of the present text.

Donald C McGraw
PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Textile World

VOLUME 108, NO. 8. AUGUST, 1958

TEXTILE WORLD'S 90th Birthday

Founded in 1868, TEXTILE WORLD has reported and analyzed all important textile developments and trends for nearly a century. Historic events covered by its editors included—

- **Invention of the Northrop loom**
- **Introduction of long-draft spinning**
- **Improvements in full-fashioned knitting**
- **Development of man-made dyes and fibers**

LABOR-SAVING MACHINES, household hints, and advice to the lovelorn were featured in the first issue of *Industrial American*, predecessor to TEXTILE WORLD.

FIRST ISSUE of *Textile Manufacturing World* had a nine-column newspaper format and carried advertising on the front page. Print order was for 10,000 copies.

Textile World is 90 years old this month. The first issue of its predecessor, *Industrial American*, was published Aug. 1, 1868. No other textile publication and few other business papers published before this date are still in existence.

At that time, the textile industry of the nation was concentrated in New England and the South was in the throes of Reconstruction. About 5.5-million cotton spindles were in operation in the entire nation.

Among the dominant textile mills of that era were Amoskeag, Naumkeag, Merrimack, Pocassett, Wamsutta, and Pacific. Most of these mills are gone, but products bearing some of their famous labels are as popular today as they were 90 years ago.

When Textile World was born, the Atlantic cable was only two years old and the New York Cotton Exchange was to be established two years later. Middling cotton had dropped during the previous four years from an all-time high of $1.89 per lb. to 31¢ per lb., not far from today's prices.

That year, on the technical side, L. J. Knowles added drop boxes at each end of the high-speed (85 ppm.) Crompton loom that had been invented several years earlier. George Draper & Sons was founded to produce spoolers, let-off motions, spindles, and other parts and supplies. The slasher, introduced from England two years earlier, was installed in a number of mills. The first power-driven full-fashioned knitting machines were coming into use.

Davis & Furber Bought Space

The front page of the first issue of *Industrial American* featured an improved feeder for wool breakers. Davis & Furber, still an advertiser, bought space in this issue. All other advertisers in the first issue have either gone out of business or have lost their identities through mergers and changes of name.

The objective of the fledgling eight-page paper was to "give current news of valuable improvements in the different branches of manufacturing, together with such information as is indispensable to the man of business and of the artisan."

On Oct. 15 the name was changed to *Manufacturers Review and Industrial American*, and the page size was enlarged.

No reason was given for changing the name and format, but it appears possible that poor business might have been responsible.

In its first few weeks of existence, the paper shrank from eight to four pages and carried very little advertising. The editor was apparently having trouble finding technical news of interest. The front page, for example, carried articles entitled: "On Courting," "How to Find a Wife," and "How Sal Disgraced Her Family." Sal's disgrace, incidentally, was caused by her marrying "a critter called an editor."

The first publisher evidently believed that a change of name brought good luck because he again changed the masthead in June, 1869, to read *Manufacturers Review and Industrial Record*.

The issue happily carried about 30% advertising and very little advice to the lovelorn. Editorial content pointed out that all the woolen mills in Rhode Island were running full time and that the South now had 86 cotton mills with a total of 225,000 spindles. Business was good, and the paper was on its way to success.

PLEASE TURN THE PAGE

Henry G. Lord Enters Picture

Manufacturers Review and Industrial Record did not change its name again until Henry G. Lord combined it with his young and vigorous *Textile Manufacturing World*, founded at Boston in January, 1888, the year of the Big Blizzard. The merger took place in 1895.

The period between 1868 and 1900, while TEXTILE WORLD was alternately enjoying and suffering growing pains, saw many changes take place in the textile industry. The South began to recover from the effects of the Civil War; and such men as Gray, Love, Hammett, and Rhyne were instrumental in establishing many new plants in the South. Southern cotton spindles increased from 0.5-million in 1880 to 4.5-million in 1900. During the same period, Northern spindles increased from 10-million to 14.5-million.

Many new machines and mechanical improvements were developed and put into operation during the last quarter of the nineteenth century. Saco-Lowell put an improved carding machine on the market about 1875. The English dobby loom was introduced by George Crompton in 1878; it ran 130 ppm., and a weaver could tend up to six looms.

The revolving-flat card and the continuous stripper for stationary flats came into general use during the last 10 to 15 years of the century.

Northrop Loom Was Invented

The great textile inventor, J. H. Northrop, came from England in 1881 to join George Draper & Sons. His first invention in the U. S. was an automatic knotter for spoolers. Soon came a shuttle changer and a self-threading shuttle. These inventions led to the construction of a filling-changing battery in 1891, the basic feature of the revolutionary Northrop loom. This loom, which permitted a weaver to run up to 36 machines, had a tremendous impact on the industry and was in wide use by 1900.

In the dyeing branch of the industry, the first azoic, direct cotton, synthetic indigo, and developed dyestuffs were discovered during the 1880's. However, most dyers continued to use madder, logwood, and other natural dyestuffs.

Although the old *Manufacturers Review and Industrial Record* did a good job in its day, it was not until 1888 that textile men had a truly 100% textile publication in the form of *Textile Manufacturing World*. According to Mr. Lord, who is still active as an executive of McGraw-Hill Publishing Co., "the original staff consisted of Walter Guild, who sold advertising (along with a self-invented calculating scale), and Henry Lord, who did everything else with the aid of one stenographer."

The initial print order was for 10,000 copies, and the advertising rate was $20 per inch per year. Among the first advertisers were Kitson Machine Co., Lowell Machine Shop, Pettee Machine Works, and William Crabb & Co.

The second issue, dated February, 1888, carried a statement by the publisher saying that "We shall positively publish 10,000 copies each issue until further notice, without any evasion, concealment, poetry, or swindle of any nature." This open circulation policy has existed ever since.

Recognized by President Harrison

TEXTILE WORLD, even in its infancy, was an authority recognized by high industry and government officials. President Benjamin Harrison, in his fourth annual message in 1892, said:

"The TEXTILE WORLD for July, 1892, states that during the first six months of the present calendar year 135 new factories were built, of which 40 were cotton mills, 48 knitting mills, 26 woolen mills, 15 silk mills, and 2 linen mills."

In 1900, TEXTILE WORLD's exhibit at the Paris Exposition was awarded a Grand Prize in the publications' division. At the same time, a Grand Prize was awarded to TEXTILE WORLD's Directory.

The turn of the century saw ring spinning coming into greater use through the development of the Rabbeth spindle by George Draper & Sons. Drawing in was still done by hand.

HENRY G. LORD founded *Textile Manufacturing World* in 1888. His purchase of *Manufacturers Review and Industrial Record* in 1895 gave TEXTILE WORLD a publishing history dating back to 1868.

Warp and filling stop motions and larger shuttles came into wide use during the next few years, and weaving costs were cut 25 to 35%.

Textile Record Acquired

In 1905 *Textile Manufacturing World* acquired *Textile Record*, and the name was changed to *Textile World Record*. The late Frank Nagle, publisher of *Textile Record*, joined the expanded organization and helped build it into a position of greater dominance in the industry.

The first synthetic derivative of indigo was announced the year this merger took place, and numerous other new synthetic dyes were patented during the next few years.

TEXTILE WORLD's next change took place in 1915, when *Textile World Record* merged with *Textile Manufacturers Journal* and became *Textile World Journal*. The publishing frequency was changed from monthly to weekly; and this policy was continued until 1932, when the magazine again became a monthly.

The last name change to TEXTILE WORLD was made in February, 1921. The major machinery development of the 1920's was the introduction of the Casablancas system of long-draft spinning.

TEXTILE WORLD merged with McGraw-Hill Publishing Co. in 1928.

20th Century Developments

During the last half century, while TEXTILE WORLD was growing to maturity, its editors observed, reported, and analyzed all important developments and trends affecting the textile industry. It would be difficult to name the most important single development or trend that affected the industry during this period, but high on the list are: the automatic loom, long-draft spinning inventions, one-process roving, man-made fibers, synthetic dyestuffs, and nonwoven fabrics.

Other important developments and trends were:

Migration to and development of the industry in the South

The growth of cotton spindles to 36-million and the shrinkage to about 21-million

Changes in labor conditions, wages, and work assignments

Rise and fall of company-owned villages

Changes in governmental control and tariffs

Changes in power sources and transmission

Increased interest in research

Development of air conditioning, one-story plants, and automation

Larger packages and higher speeds

Direct spinning.

ZEFRAN

...the newest commercial fiber

Two weeks ago, commercial production started on the newest man-made fiber—Zefran. By fall, full capacity of 1-million lbs. per month will be attained.

- **What is Zefran?**
- **What is it used for?**
- **What manufacturing systems is it best adapted for?**
- **How are mills running it?**

To get answers to these questions, TEXTILE WORLD's editors called on 16 spinning, weaving, knitting, and finishing plants and found Zefran readily adaptable to most mills' machines.

what zefran is

Zefran, the latest man-made fiber to go into commercial use, started production at Dow Chemical Co.'s Williamsburg, Va., plant last month. So far, 64 mills have tested the fiber, and most mills processing the fiber like it.

Zefran is a polyacrylonitrile modified with a dye-receptive component so that the fibers can be treated with vat, naphthol, sulfur, aftertreated direct, and neutral premetallized dyes. The alloy structure also adds such properties to the fiber as good dimensional stability, low pilling, and long wear.

The fiber is a good white color with a round cross section, 3.4-grams-per-denier tenacity, 30% elongation, 2.5% moisture regain, and a boiling-water shrinkage of 1 to 2%. Fiber lengths range from 1½ to 4½ ins., and the deniers are 2, 3, and 6 in bright and semidull lusters.

Zefran is not a high-shrinkage fiber and cannot be made into high-bulk yarns. While fabrics from 100% Zefran have been knitted and woven, the most successful fabrics so far have been made from blends of Zefran with natural fibers.

These blends have been run on cotton, worsted, and woolen systems with little trouble.

End uses of Zefran include men's and women's suitings, coatings, pile fabrics, and sweaters. The fiber has properties that suggest its use in blankets and carpets.

The price of Zefran is $1.28 for 3-den. staple and $1.33 for 2-den. staple. These prices compare favorably with other acrylics, but some mills feel that money will be saved in dyeing costs.

PROCESSING DETAILS

COTTON SYSTEM

Picking

Laps	12 to 14 oz. per yd.
Lap weight	25 to 30 lbs.
Beaters	Kirschner
Beater speeds	800 to 900 rpm.
Fan speeds	900 to 1,000 rpm.
1st beater setting	3/8 to 1/4 in.
2nd beater setting	3/16 to 1/8 in. with fringe roll
Pneumatic rack pressure	26 to 30 psi.

Adjust dampers to blow larger portion of stock on upper screen
Use split-lap preventer to aid lap formation
Use maximum calender-roll pressure

Carding

Production	10 to 15 lbs. per hr.
Sliver weight	50 grains per yd. ±5
Trumpet size	0.15 in. for 50 grains
Lickerin speed	About 400 rpm.
Doffer speed	8 to 12 rpm.
Stripping	Up to 8 hrs. between strippings
Feed plate to lickerin	0.017 to 0.022 in.
Lickerin to cylinder	0.007 in.
Flats to cylinder	0.010 in.
Cylinder to doffer	0.007 in.

Drawing

Sliver weight	50 grains per yard
For 4-over-4 drawing	1–2 Staple + 1/8 in.
	2–3 Staple + 1/4 in.
	3–4 Staple + 3/8 in.
Feed	6 to 8 ends
Draft	6 to 8

Heavier sliver than 50 grains per yard requires 1 1/2-in. tube gear and 0.15-in. trumpet for best results.

Roving

Twist multiplier	About 0.85 to 1.05
Settings	1–2 Staple + 1/8 in.
	2–3 Staple + 1/4 in.

Roving tensions should be low with lay adjusted for fiber bulk.

Spinning

Draft range	15 to 24
Twist multiplier—filling	2.75 to 3.25
—warp	3.25 to 4
Roll settings	1–2 Staple + 1/8 in.
	2–3 Staple + 1/4 in.
Spindle speed	Up to 10,000 rpm.

WORSTED SYSTEM

Humidity	50 to 60%
Temperature	75 to 80° F.

Preopening

Light picking only. Mixing and Fearnought pickers give good results.

Blending

Zefran can be blended with wool in raw stock, card sliver prior to combing, or combed top.

Carding

Conventional and modified worsted cards can satisfactorily process 100% Zefran and blends of Zefran and wool. Single cylinder cards give good results with 100% Zefran.

Sliver weight	120 to 150 grains per yard
Settings	Same as for 60 to 64s wool

Combing (Noble)

Weight fed	About 2,500 grains per yard
Delivery	About 430 grains per yard
Preparer gilling	1 or 2 processes for 100% Zefran
	3 for wool blends

Combing (French)

Weight fed	12 ends of 140-grains-per-yard sliver
Noil	1.5 to 3 for 100% Zefran
Finisher gilling	2 with 15 pins per inch

Zefran need not be combed for coarse yarns. A good top is produced with 3-den. and coarser fibers when carded mildly.

Settings for 3-den., 4½-in. Zefran American System (Davis & Furber gauges)

Carding

Feed rolls to lickerin	20 gauge
Lickerin to transfer roll	26 gauge
Divider to breast	26 gauge
Workers to breast	26 gauge
Strippers to breast	26 gauge
Doffer to breast	28 gauge
Transfer roll to doffer and cylinder	28 gauge
Workers to cylinder	30 gauge
Fancy to cylinder	28 gauge intersecting with medium feed
Finisher doffer to cylinder	30 gauge
Doffer comb to doffer	30 gauge
Sliver weight	130 to 150 grains
Production	30 to 35 lbs. per hr.

Pin Drafting	1st process	2nd process	Finisher
No. of ends	5	6	6
Pins per inch	18	22	29
Draft	7.5	8.5	9.4
Weight fed (grains per yard)	150	100	70
Weight delivered (grains per yard)	100	70	45
Front roll to front faller (ins.)	3/16	1/8	0.030

Roving

No. of ends fed	1
Draft	10.9
Weight fed (grains per yard)	45
Weight delivered	2 hk.
Ratch (3 and 4 1/2-in. staple on F-5)	4 3/4 ins.
(4 1/2-in. staple on Quik-Set)	6 ins.

Spinning

No. of ends fed	2
Draft	18
Weight fed	2 hk.
Weight delivered	1/27s
Roll setting	
Front to second	Staple + 1/8 in.
Second to back	Staple + 1/2 in.

yarn manufacture

Cotton System

Good results in carding and spinning Zefran into 18s and 35s knitting yarn are reported by Carlon Div., Carlton Yarn Mills, Kings Mt., N. C.

The yarn was produced on the cotton system with the same speeds and settings normally used by the mill for Orlon. No special problems were encountered in processing the 1½-in., 3-den. staple.

The sample yarns spun at Carlton were made of 100% Zefran. Appearance and hand are typical of acrylic fibers.

Breaking strength for the 18s was 146.5 lbs. This number was spun with a 3.50 TM and 14.8 tpi. The 35s, made with a 3.50 TM and 20.3 tpi., broke at 50.2 lbs. No evenness tests were run.

Processing Data Are Given

Here's how Carlton processes Zefran:

The stock is opened by a blending-and-weighing feeder and made into 12-oz., 40-lb. laps on a one-process two-beater picker. No moisture or antistatic agent is used. About 50% r.h. is maintained in all departments, and no attempt is made to control temperature.

The three-blade back beater and the Kirschner front beater are both set to run 700 rpm. Back fan speed is 1,300 rpm., and front fan speed is 1,400 rpm.

The laps are carded into a 48-grain sliver at 9¾ lbs. per hr. Speeds are the same as for Orlon: cylinder 165 rpm., lickerin 340 rpm., and flats 1½ ins. per min.

How Cards Are Set

The card settings used by Carlton are:

Doffer to cylinder	0.007 in.
Flats to cylinder	0.009
Lickerin to cylinder	0.007
Feed plate to lickerin	0.012
Back screen	0.017
Bottom screen	0.034
Front screen	3/16
Top front plate	0.022
Bottom front plate	0.034
Top back plate	0.022
Bottom back plate	0.034
Lickerin screen	3/16
Mote knife	0.010
Comb to flat	0.022

The card sliver is put through two processes of drawing, six ends up, at 164 ft. per min. This speed could be increased to 300 ft. per min. or more if necessary for production reasons. The sliver weight is maintained at 48 grains through both drawing processes.

Carlton has had no experience in blending Zefran with other fibers, but the management believes that the best place to blend it with cotton would be at drawing.

For the numbers spun, 2-hk. roving is made on one-process frames. Spindle speed is 560 rpm., front-roll (1⅛ ins.) speed 150 rpm., draft 11.50, and twist multiplier 0.75.

Long-draft spinning frames with 2-in. rings are used at Carlton to spin Zefran. A No. 21 traveler is used for the 18s, and a No. 25 traveler is used for the 35s. Roving is double creeled. Ends down average 32 per thousand spindle hours, about the same as for Orlon.

For the 18s, spindle speed is 6,750 rpm., front-roll speed 145 rpm., back draft 1.22, total draft 18, and twist multiplier 3.50.

For the 35s, spindle speed is 8,450 rpm., front-roll speed 130 rpm., back draft 1.22, total draft 35, and twist multiplier 3.50.

Front-roll speed for both numbers could be increased substantially if necessary for greater production.

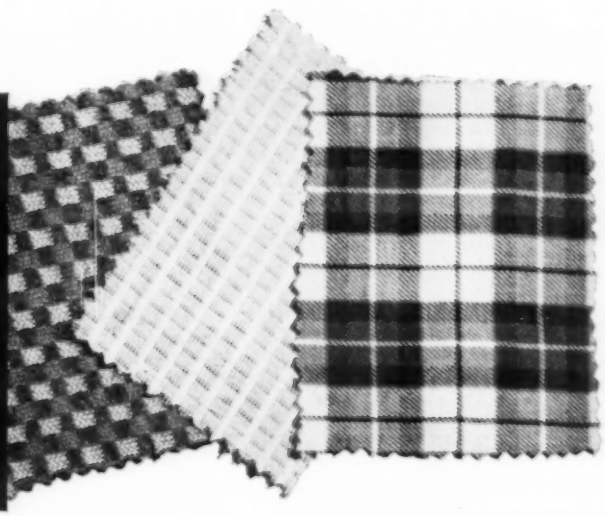
In summary, the Carlton management says that "Zefran in sample lots runs as good as Orlon, which is the best running fiber we have processed to date on a production basis."

Watatik Blends at Picker

Watatik Mills, Fitchburg, Mass., has had equally good results in spinning Zefran on the cotton system. This mill spins 2- and 3-den., 1½- and 2-in. staple into 40s yarn. Blends of 70% Zefran with 30% cotton and 80% Zefran with 20% rayon are made at the picker. Card settings are the same as for Orlon.

PLEASE TURN THE PAGE

ROVING AND YARN made from Zefran are strong, and the fibers draft easily. Close settings can be made on roving and spinning frames, and lint accumulations are low.



FABRICS made from Zefran range from women's coatings to jersey fabrics. Most fabrics are made from blends with natural fibers such as wool, cotton, or Angora.

Less cleaning is required because of the small number of short fibers in the stock.

Single-process drawing is used at Watatik, and settings are somewhat closer than for Orlon. Closer settings also are used at the roving and spinning frames. Temperature and humidity conditions are about the same as for Orlon.

Worsted System

Zefran processes well on the worsted system. The fibers draft easily, and close settings can be obtained because of the lack of short fibers.

Most mills find that temperature and humidity conditions are not so vital a factor for the successful processing of Zefran as it is for other man-made fibers. Wachusett Spinning Mills, Fitchburg, Mass., runs Zefran at slightly lower temperatures and humidities than are used for other fibers.

Worsted-type yarns are made at this mill on the American system. Zefran is first put through a cotton card with the settings used for Orlon.

Three pin-drafter operations follow carding. Here again, the same settings, speeds, and weights used for Orlon are used for Zefran.

Even roving is obtained, and few ends down are experienced because of the lack of short fibers. This same property cuts the amount of lint produced. Wachusett uses 2-den., 2-in. staple to make 2/60s worsted yarn from Zefran.

French Worsted Co., Woonsocket, R. I., spins a blend of 60-40 Zefran-wool. The Zefran staple is 4 to 4½ ins. long. Half the Zefran is 3 den. and half is 6 den.

Machine settings and speeds are similar to those used for wool, although no emulsion or oil is used and the blend is run through the man-made-fiber section. Relative humidity is kept between 60 and 65%.

Zefran is received in top form and is blended with the wool in the first process. Two extra gillings on a heavy gill box insure even blending. Drawing, roving, and spinning are carried out in a similar way to the processing of wool.

Spinning draft is 15, and 2/26s yarn is spun with 9.5 tpi. The twist in the ply yarn is 7 tpi.

Mills reported that Zefran gives added strength to wool blends; so ends down are fewer and yarns are more even. No static problems are encountered, and no lapping of rolls has occurred.

Woolen System

A. D. Ellis Mills., Inc., Monson, Mass., is producing women's coating fabrics from 50-50 Zefran-Angora blends. The Zefran is 3-in., 2-den. bright staple; and the finished fabric has a vicuna-like hand.

These yarns are spun on the woolen system; and no trouble has been encountered in blending, carding, or spinning. A sandwich blend is made, and the blend passed through a mixing picker. Normal speeds used for wool are run, and a little emulsion is added at the picker.

Normal speeds and settings are used on the cards and spinning frames. Five-run yarns are spun for filling, and 10-run yarns made from 100% Zefran are spun for the warp.

Men's 8-oz. suitings are also made at this mill from 50-50 Zefran-64s wool. Zefran adds strength, greater uniformity, and more pleasing hand to these fabrics.

weaving

When Zefran moves into the woven-clothing market this month, it will appear as all-Zefran fabrics and with blends of other fibers, including wool, cotton, and Angora. Mills weaving these fabrics have two definite targets: (1) outerwear garments with a soft luxurious hand and (2) everyday shirts, dresses, and children's wear with built-in crease resistance.

Specific uses of the fabric are women's coats, suits, dresses, sportswear, and rain wear and men's year-around suits, coats, sportswear, rain wear, and shirts.

Three mills are presently weaving the fabrics: (1) A. D. Ellis Mills, Inc., Monson, Mass.; (2) Berkshire Hathaway, Inc., Hathaway Div., New Bedford, Mass.; and (3) Cyril Johnson Woolen Co., Stafford Springs, Conn. Sales deliveries are being made this month.

Woolen System

A. D. Ellis is weaving Zefran as 100% Zefran fabrics and several blends. It started weaving the fiber a little over a year ago and got off to two bad starts in the first fabrics designed; the fabrics did not work out for best designs.

The third weaving attempt at Ellis was in men's and women's wear and was successful from the start. Ellis is shooting for the higher-quality fabric market; and Ray Jones, director of fabric development, says, "The soft, luxurious hand of Zefran is much like that of our cashmere and vicuna fabrics. Wearability is comparable to cashmere fabrics as shown by our tests. Tensile strength is way ahead of cashmere or any other luxury fiber.

"We're using Zefran for a fine-quality fiber to create better fabrics rather than as a strengthener for cheaper materials. In addition to its fine hand, Zefran is a beautiful color job and appears to be crease resistant. In women's wear, rumpled places straighten out quickly when they are relieved of strain. Men's suits have good draping qualities."

Examples of fabrics woven are a 16-oz. fabric of 50% blend of 3-in., 2-den. bright Zefran and 50% Angora. The warp is 10-run, 100% Zefran; and filling is Angora. This fabric is made with 10 harnesses; two harnesses contain only selvage ends. The weave is a one-harness-up and three-down twill.

A second fabric for men's suiting weighs 8 oz. and is 50% Zefran and 50% wool. The warp is 100% Zefran, and the filling is 64s wool. There are 50 ends per inch and 38 ppi. All fabrics are woven 69 ins. wide in the loom in 55- to 57-yd. lengths.

Both yarn-dyed and piece-dyed fabrics are woven in many colors. Ellis does its own dyeing.

Conventional Machines Are Used

There have been few problems in manufacture; there are no static problems, and yarns run extremely uniform.

Manufacturing all the way through the plant is on woolen-system machinery. In dressing, yarns are wound to large packages or to jack spools on high-speed spoolers. Then they're wound on the loom beam on a conventional warper. All Zefran yarn is made in 500-lb. lots instead of the usual

2,000-lb. lots made at the mill.

At the warper, care is taken to keep yarn tension light and uniform; and loom yarn-beam heads have to be adjusted so that the selvages at the yarn beam form a straight line with the selvages at the cloth beat-up of the loom to prevent chafed yarn.

Warps are drawn in by hand or are retied in a single hand with a portable tying-in machine. Since the Zefran yarn is uniform, it ties more easily than woolen yarn and the speed is 300 knots per minute.

Yarn and Fabrics Are Kept Clean

Filling is wound on conventional winders. Bobbins are thoroughly cleaned often. Wound filling bobbins are steamed in a conditioner before they are placed on the loom.

The biggest problem in weaving has been to keep the yarn and fabric clean at looms. New drop wires are used, and heddles are cleaned before warps are drawn. The woven fabric is covered with a cloth apron at the loom breastbeam, and weavers and loom-fixers take care in handling yarn and fabric.

Looms are W-3 and are 92 ins. wide. They run at 118 ppm. Knowles heads are used; the harness timing is medium-slow-medium, and harnesses cross ½ in. before the beat-up position.

Selvages are two ends to a heddle with a total of 24 ends per selvage; ends are reeded six per dent. The selvage is a basket weave.

Fabric Defects Are Eliminated

One problem that had to be overcome on Zefran was to prevent jerked-out selvages. Filling is three ply, and ragged knots tied at the winder strained the selvages excessively when the knots passed through the shuttle eyes. The hole in the shuttle eye was increased to prevent this damage.

Tension for the filling in the shuttle is applied with a wool brush in the shuttle eye and bristles in the shuttle side walls.

Filling bands are prevented by mixing the filling with the shuttles from two shuttle boxes. Over-all weaveroom efficiency is 78 to 80%, which is the same as for regular woolen fabrics. To date, no Zefran fabric has been graded as seconds.

Cotton System

Berkshire Hathaway is completely on the cotton system. Zefran-cotton blends are made at Hathaway by the same machinery and methods used to make Orlon-cotton and Dacron-cotton blends.

At Hathaway, both yarn-dyed and piece-dyed goods are woven. Hathaway's objective is twofold: (1) An everyday fabric that has crease resistance without requiring a resin finish with its resulting fabric weakening and (2) a fabric that will uphold Hathaway's reputation in colorfast goods.

Typical fabric constructions are: 80% Zefran and 20% cotton blend in a 2x2 twill yarn-dyed gingham. Width is 47 ins., and construction is 80x72. Denier is 1.5 and staple is 1½ ins. Cotton is 1⅛-in. staple. This fabric is used for men's shirting. Both warp and filling are 35s. Colors are red, blue, black, and natural.

A similar lighter construction of 80x64 is made in a plain weave for dress goods. Both fabrics are woven on C-6 4x1 looms.

Zefran Shirting Has Advantages

Another fabric that promises to be a natural is a leno shirting material of 80% Zefran and 20% cotton woven gray. Zefran denier is 1.5, and staple is 1½ ins. Warp and filling yarns are 45s. Fabric construction is 80x50 or 76x50. Width is 38½ ins. This cloth is woven on XD looms.

Don Pearson, director of quality control says, "These Zefran fabrics wash well, dye well, and are wrinkle resistant without a resin finish. On the all-cotton leno, for example, the resin finish lowers the strength. We can't use a polyester fiber because it pills in singeing.

"The Zefran-cotton-blend yarn has approximately 20% more bulk than polyester-cotton blends; so we get a better fabric cover at lower yarn numbers. In wear tests, Zefran-cotton performs better than acrylic-cotton blends and almost as well as polyester-cotton. The fabrics have a nice hand, and colors stand up well.

Problems Are Being Overcome

"Problems with Zefran are:

"1. It's difficult to get yarn strength as great as cotton although elongation is greater than cotton. But after Zefran is woven, the fabric is strong.

"2. We have not been able to make make satisfactory yarns much over 40s, and we're a 40s to 80s mill.

"Manufacturing methods from warping through weaving are exactly like cotton methods with one exception – new slashing methods are needed.

"On our first fabrics, we ran as little tension in warping as possible to avoid bulking. But we eliminated this care when we changed our slashing methods.

"We slash cotton with size at 180 to 190° F. This temperature does not give proper yarn elongation on Zefran. We reduced our size temperature to 140° F., and we use a new size formula of gum and polyvinyl alcohol. Now all bulking is prevented."

knitting

Circular Jersey

Zefran knits well on circular jersey machines. However, proper selection of the correct yarn for the knitting machine is important. Circular-knit fabrics made from 100% Zefran and blends of Zefran and cotton spun on the cotton system have been disappointing so far.

Blends of 65-35 Zefran-cotton have been spun to 30/2 and knitted on 18-cut machines with 32 courses per inch. Fancy tuck fabrics have also been knitted. Knitted in plain jersey constructions, the fabric lacks hand, uniformity, and stability when knitted from cotton-system yarns.

However, Zefran spun on the worsted system and blended with wool produces fine jersey fabrics with good hand, stability, and drape. Blends of 50-50 Zefran-64s wool give excellent results.

Full-Fashioned Sweaters

Talbott Knitting Mills, Reading, Pa., is knitting women's full-fashioned sweaters from 100% Zefran yarns spun on the worsted system. No processing difficulties have been experienced, and the yarn performs like fine merino worsted yarn.

The yarn is spun to 2/24s and knitted on 21-gauge machines. The stitch texture is flatter than the stitch

from most other yarns and follows recent trends toward this type of stitch.

No special problems have been met in looping, sewing, dyeing, or finishing. Dyeing is done on conventional paddle-type machines. Neutral, premetallized, acid, and direct colors are being used to produce a full complement of colors.

These colors are applied at temperatures below the boiling point in relatively short dyeing cycles. By modifying the finish, several different hands have been given to the finished sweaters.

A hand that is pleasant and woollike has been adapted by Talbott. Wear tests have shown good dimensional stability; so they can be machine washed.

chemical treatment

Commission dyers and finishers have done little more than experimental work on Zefran or blends of Zefran with other fibers so far.

But a favorable impression has been created by the new fiber. Dyers have found it to be easy to dye with several classes of dyes; and they are able to get good unions when Zefran is blended with cotton, rayon, or wool.

Yarn Dyeing

For example, Globe Dye Works, Philadelphia, Pa., has done considerable experimental work on Zefran yarns and yarns made of Zefran and wool. Globe has found that yarns made from Zefran and blends run well in the winding operation necessary to produce the standard 1¼-lb. package it makes for dyeing.

Globe scours all-Zefran yarns before dyeing with a small amount of ammonia and a nonionic detergent for 20 mins. at 140 to 200° F., according to the shade, the yarn number, and twist.

Then the Zefran is dyed in a fresh bath by the following general methods:

Direct Colors Useful

By selecting the right dyes, Globe dyes Zefran to any depth of shade, and the colors have good lightfastness. Very satisfactory washfastness can be obtained by aftertreating the shade with copper sulfate.

Dyeing procedure is standard for direct colors on cellulosic fibers. The bath is started at a 100 to 110° F. temperature, brought to dyeing temperature and let run four or five complete cycles, and then salted and let run to completion.

In some cases, colors that require a copper-resin complex for after-treating are used for even better washfastness.

Globe has found that in applying vats and naphthols to Zefran, somewhat higher temperatures are necessary than with cellulosic fibers.

Vats do better on Zefran if the pigmentation is carried out at 20 to 40° F. higher than is normal for cotton or rayon. The same holds true for the reduction process.

Naphthol bases are started at 100° F. and raised to 160° F., also higher than normal. The yarn is then rinsed and the fast color salt is added at 80° F., and the bath is raised to 140 to 160° F. according to the salt being used. Dyeing time is about the same as for cotton.

Neutral-dyeing premetallized colors require a little more time to get good exhaustion on Zefran than is necessary for wool, but results are excellent.

How Blends Behave

Globe has dyed blends of Zefran with wool, cotton, and rayon. Zefran-cotton blends are usually bleached with sodium chlorite before dyeing to clean up the cotton. Good unions are obtained by manipulating the dyeing temperature. Aftertreated direct colors have been most used on these blends.

Zefran-wool blends are generally dyed with neutral-dyeing acid colors for the wool and similar premetallized dyes for the Zefran. Both two-bath and single-bath methods have been tried. Here again, temperature control and added time to get good exhaustion on the Zefran are important factors.

Piece-Goods Dyeing

Hellwig Dyeing Co., Philadelphia, Pa., has run a small amount of a 50-50 Zefran-cotton blend with an anthraquinone vat. The goods were scoured with Duponol and TSPP in an open-width boil-off followed by a rope scour at 180° F. Then they were dried, padded in the vat pigment, dried, reduced at 120° F., oxidized with H_2O_2 and acetic acid, and soaped in a jig. No special precautions or changes over normal procedure for cotton goods were taken.

The result was a good, level shade with excellent union between the fibers. A slightly dry hand was easily corrected by adding a small amount of softener during finishing.

Hellwig has finished a number of pieces of yarn-dyed all-Zefran and some similar Zefran-Dacron mixtures. The hand is easily built up with U.-F. resins or softened by conventional methods.

Retarders Help Unions

Fairlawn-Richmond Finishing Co., Fairlawn, N. J., has done work on Zefran-cotton and Zefran-rayon blend fabrics. It has found that it can get good unions on these blends with direct or aftertreated direct colors if retarders are used in the dyebath. Zefran's avidity for color has to be held back in the early stages of dyeing or it will overdye. Fairlawn has dyed its Zefran pieces in dyebecks by normal methods.

Top Dyeing

Fred Whitaker Co.'s Raleigh, N. C., plant has dyed some Zefran top. A spokesman for the company reported that in all operations Zefran has been satisfactory to handle.

A typical routine for dyeing a black on Zefran top starts with a thorough wetting out of the 20-lb. packages. Color is carefully dissolved with a dispersing agent added and run into the machine in a fresh bath at 100° F.

The lot is brought to a boil in 45 mins. and let run 30 mins.; then steam is shut off, and common salt is added. The bath is then reheated to the boil and the lot is sampled 25 mins. later. After a rinse bath, the top is treated with Glycofix and acetic acid at pH 6 at 150 to 160° for 30 mins.

Then the top is backwashed and dried.

About 6% of Carbide F Black G produced a deep, well-leveled black by this process. Whitaker finds that Zefran runs as well as wool in its operations and thinks it holds considerable promise as a commercial fiber.

Alabama Mill Executives Go for
PLASTIC SHUTTLES

- **Alabama executives are going for new plastic shuttles. All 16 mills reporting at the most recent meeting of TOE are either using or testing the shuttles.**

- **Other important subjects of the moment discussed are how to prevent sloughed and kinky filling.**

THE 16 MILLS REPORTING at the spring meeting of the Alabama Textile Operating Executives, held at Auburn, had differences of opinions on all subjects discussed except one—they agreed that the new plastic shuttles are best.

But these shuttles have some disadvantages. Fifteen mills are using the new shuttles; and the other mill is testing them.

Mill reports are:

Mill A—"We are running plastic shuttles in all our 40- and 48-in. X-2 looms. The 40-in. looms are running 180 ppm., and the 48-in. looms are running 173 ppm.

"We have been using the shuttles only eight months and therefore we cannot estimate their life. But all our fixers like them."

Mill B—"We are now changing to plastic shuttles. We do not have any conclusive figures on over-all shuttle life for the plastic shuttles, but one shuttle has been running 9,000 loom hours.

"Our looms run at the following speed: 46-in. X and X-2 looms, 178 ppm.; 54-in. XP, 160 ppm.; 60-in. XP, 154 ppm.; 40-in. X-2, 182 ppm."

94 Shuttles Have Run Two Years

Mill C—"We have 100 44-in., K-model, cam looms running plastic shuttles. These shuttles have been running two years with only six shuttles replaced.

"The plastic shuttles are heavier than dogwood shuttles, are harder to box, and are more expensive because of picker and binder wear. Great savings can be made by using plastic shuttles on coarse goods. But we do not recommend them for hard-to-make, high-quality fabrics.

"Our loom speed is: 42- and 4-in. E-model, cam looms, 158 ppm.; 44-in. K-model looms, 158 ppm.; 50-in. X-2 looms, 165 ppm.; and 50-in. XP looms, 156 ppm."

146 Shuttles Have Run 5,000 Hrs.

Mill D—"We have plastic shuttles in 150 looms. They have run 5,000 loom hours and are still in good condition. A few shuttles are cracking near the eye or spring.

"But only four shuttles have been replaced. They were thrown out of warps while the warps were being pulled over at tie-backs. Loom speed is 163 ppm. on 60-in. X-2 looms and 155 ppm. on 60-in. XP looms."

Mill E—"We are well pleased with plastic shuttles on X-2 and XP looms. The shuttle spring does not last as long as the shuttle. The spring wears so much from filling transfers that the quills become loose in the shuttles. Several spurs have also come loose.

"We have more wear of pickers and box plates, but the wear isn't excessive.

"Loom speed is: 46-in. X-2, 182 ppm.; 60-in. X-2, 160 ppm.; and 64-in. XP, 145 ppm."

Spinning Starts Sloughed Filling

Sloughed filling can be caused both in spinning and weaving. So mill men start their preventive program in the spinning room.

Spinners can help by: (1) using travelers heavy enough for the yarn being run, (2) winding a tight filling package, (3) setting a medium-long build at the traverse, and (4) using good bobbins.

Mills with quillers report that rewinding filling either eliminates sloughed filling or helps control it. Mill reports are:

Mill A—"All our filling is rewound on quillers, and we do not have sloughed filling."

Mill B—"We rewind all our filling on winders, and this practice helps correct trouble that would cause sloughed filling. We also condition our filling in a conditioning machine."

Mill C—"When a loom sloughs filling, we: time the harnesses; take off excessive picker-stick power; box the shuttle; check filling tension; set the pick and picker-stick stroke; replace worn pickers and box leather; use the oldest filling first; and humidify stored filling."

Mill D—"We wind filling firmly on the quills with a medium-long build. At the loom, we use as little picking power as possible and see that check-straps check the shuttles. And, of course, filling must not become dry."

Four Efforts Pinpoint Causes

Mill F—"Several factors make sloughed filling. We start eliminating it in spinning on 2.50 to 21s yarn by: (1) using good bobbins with a deep groove, (2) building filling bobbins with the proper butt and taper, (3) winding yarn tightly on bobbins, and (4) running travelers that are heavy enough for the yarn.

"In weaving, we: (1) run looms with a minimum of picking power, (2) box shuttles properly, (3) keep correct tension on filling with bristles, and (4) keep weave-room temperature between 75 to 80° F. and humidity between 85 to 90% r.h."

Mills Fight Kinky Filling Daily

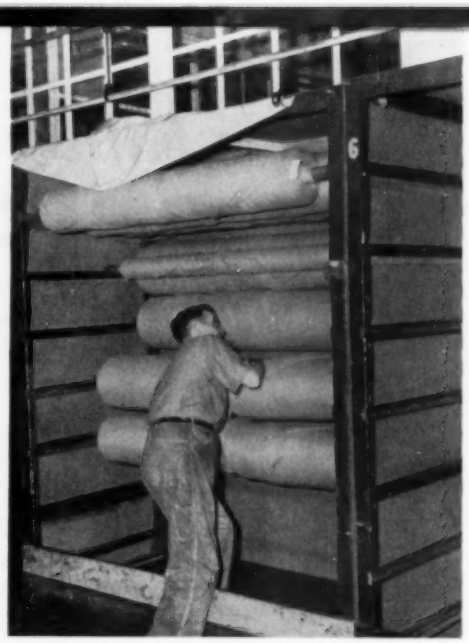
Kinky filling is a daily problem in all mills. Storing filling before it's used in weaving helps three mills; but the other mills use filling without storage.

Close control of shuttle boxing and correct harness timing are the best preventives in weaving. Two mills are successfully using wool on the right-hand front box plate to reduce kinks. Characteristic reports of mills are:

Mill A—"The main causes of kinky filling are: rough shuttles, front boxes, and binders; loose shuttle springs and eyes; loose crank arms; too much pick-

CONTINUED ON PAGE 118

CARDS are separated by glass partitions that keep the different fibers under control. Humidity and temperature conditions are controlled to suit each card.



SPOOLS with cashmere roving are handled carefully. They are stored in these covered racks until they are required at the spinning frame.

How Woonsocket Spinning Co. Spins LUXURY FIBERS

SPECIALTY FIBERS find their way from all corners of the world to be spun into yarn at Woonsocket Spinning Co., Woonsocket, R. I. These fibers include rare animal hairs such as cashmere, vicuna, and Iceland wool.

Woolen-system techniques are used to handle these rare fibers so that the original hand is not harmed. Such techniques as separating cards and spinning sample lots are practiced to produce best-quality yarns.

The down from the undercoat of Himalaya cashmere goats, which contains microscopic air pockets with excellent insulating properties, is used to produce sweater yarns. The down from Iranian cashmere goats is used for weaving yarns, although yarns for men's sweaters have been spun from the Iranian fibers.

What Vicuna Is

Vicuna, which comes from the animal of the same name, is imported from South America. Only about 28,000 lbs. of this fiber are imported each year because of conservation measures to protect the small flocks left in existence. The vicuna cannot be domesticated and must be killed to get the fiber.

Vicuna fiber is finer and more lustrous than cashmere, and the color ranges from blonde to caramel. Fabrics made from yarns spun from these fibers are usually not dyed.

Although most vicuna goes into weaving yarns, sweater yarns from vicuna are under development. Problems in bleaching and dyeing are being worked out to produce a suitable color range.

Iceland Wool Is Blended

Iceland wool is blended with lambs wool to maintain the rugged appearance of Iceland wool and yet impart a soft feel unobtainable with the Iceland wool alone. Grade No. 1 wool from young sheep is preferred for both wools because it contains the largest percentage of down.

When these fibers are received at the mill, they are checked carefully in the laboratory. A few hundred fibers from each lot are selected and measured for length and diameter and checked for appearance. The results of these tests are used for setting up the machines.

Fibers for dyeing are processed in high-pressure raw-stock dye machines. These stainless-steel machines are in 25-, 50-, 250-, and 500-lb. capacities. Specially designed kettles are used for cashmere.

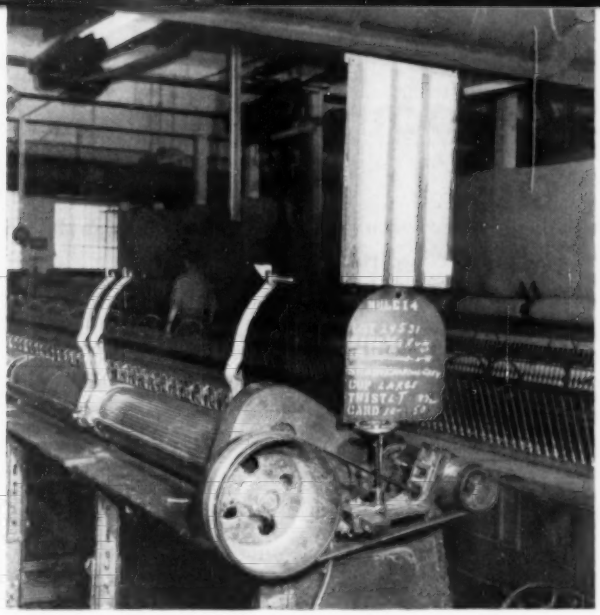
The fibers are laid down in sandwich blends by hand in one of the two mixing rooms. The stock is then passed through a mixing picker and placed in bags ready for carding.

Each of the 14 cards is separated by a glass partition to keep fibers from migrating when different fibers are run on adjacent cards. The partitions are open in the middle and at each end so that the card tender can watch two cards.

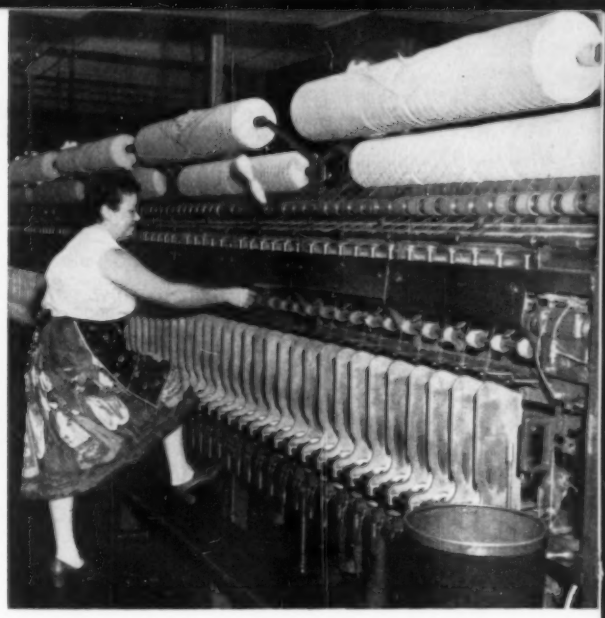
New Cards Are 72 Ins. Wide

Two newly installed cards are 72 ins. wide. The other cards are 60 ins. wide. Cards used for processing cashmere are equipped with finer card clothing than cards for wool blends, and they have special attachments for carding cashmere.

The card tender feeds the stock to



YARN-APPEARANCE BOARDS are hung at the end of each mule and spinning frame to show the standards for that yarn. Mules spin some specialty yarns better than ring frames.



SPINNING specialty fibers is done on conventional woolen spinning frames. A short spinning frame is used to process a sample of each new roving.

Vicuna, cashmere, fur blends, and Iceland wool are some of the specialty fibers spun at Woonsocket Spinning Co. To help retain the soft, lofty hand of these delicate fibers—

- **Cards are kept separate**
- **Roving is first processed on sample frames**
- **Yarn is tested frequently for strength**

the cards by hand. He tests roving for size twice each doff. Spools are handled carefully, and they are stored in covered bins on racks until they are required on the spinning frame.

Two mules have been retained to spin specialty slub yarns where the mule does a better job than the ring frame. There are 12 wool spinning frames with 200 spindles each and a short sample frame to process the roving from the cards.

The sample frame is used for each new lot run through the mill. When a new lot of fiber is processed on the cards, the spools are taken to the sample spinning frame. The results of this test are then used to set up the production spinning frames.

Yarn Is Checked for Strength

Testing equipment is arranged throughout the mill as close to the machines as possible. In addition to size checks, which are made on yarn every shift, each lot is tested for strength in the spinning room.

An appearance card is clamped to the end of each frame and mule. Each lot that comes from the frame or mule is compared with yarn on the appearance card. If limits are exceeded, the machine is immediately stopped.

Sizes of the yarns range from two to eight run. Some yarns are twisted after spinning. Twister bobbins are handled on racks to prevent damage to the yarn, and the yarn is conditioned while it remains on these racks.

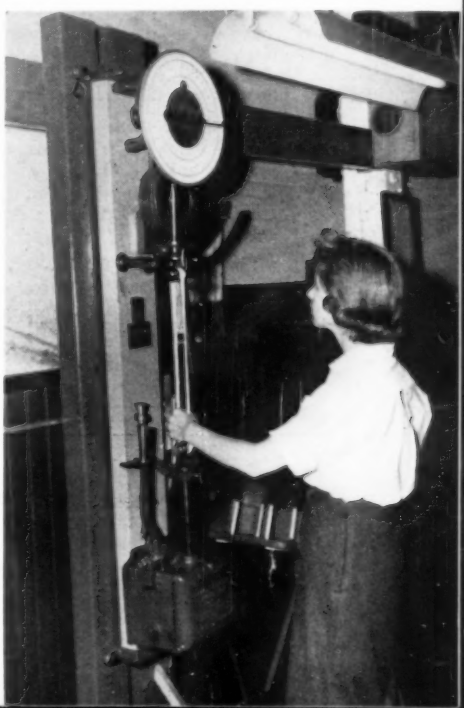
After conditioning, the yarn is wound on cones. Samples of finished yarn are then knitted on an 8-in.-dia. knitting machine to check for yarn appearance.

Fur Blends Are Also Run

These specialty fibers and blends of these fibers are processed along with wool yarns and fur blends. Machines are cleaned thoroughly before a new lot of fiber is processed.

Management at Woonsocket thinks that cashmere blends with Australian lamb's wool for women's wear has great potential. Camel's hair is also attracting some attention for men's wear, and sweaters from these yarns have been manufactured.

TESTING is done close to the spinning frames. A sample of yarn from each lot is tested for strength, and size checks are made each shift.



How *Fast* Will Your Looms Run?

Running looms slower than the recommended speed is often only a dodge for poor planning and poor loomfixing. Here's a program you can follow to review conditions in your own weave room to—

- **Increase loom speed**
- **Step up general efficiency**
- **Reduce bad work**

By RICHARD B. PRESSLEY, Senior Associate Editor, TEXTILE WORLD

IF YOU'VE HAD TO TIGHTEN YOUR BELT RECENTLY to squeeze out normal profits, maybe you should look at your loom speed to see if you're running looms fast enough for efficient operation. Chances are you'll be able to up the speed on some looms even if it's only in small groups.

In making a study of loom speeds, you should keep the recommendation of the loom makers in mind. If looms are not operating efficiently at the speed recommended by the makers, it is almost certain that the fault is with the mill and that the trouble is poor loomfixing or poor yarn, or a combination of both.

Frequently, slow speed is resorted to as a cover-up for poor loomfixing. The faster a loom runs, the more critical are the adjustments and the more skill and care required to maintain proper adjustments.

More Fixing Skill Is Needed

Any considerable change in loom speed creates a new set of loom conditions; and unless the fixer responds with the necessary ability, the mill will pay for it through increased cost of repair parts, seconds, and loom stops.

No single weakness of warp, filling, or loom condition will cut heavily into loom production; but an accumulation of these faults can seriously reduce the production of any weave room.

If efficiency is low, a close study of loomfixing practices will nearly always point the way to improvement.

Three Loom Parts Show Trouble

A quick glance at a few looms will give you an indication of over-all loom condition; for this inspection, you'll need to check only three easily accessible major loom parts:

1. Lay for rough leathers, binders, box covers, and pickers
2. Shuttles for rough places, bad linings, and bad eyes
3. Harnesses for too little shed clearance over the shuttle, uneven shed, and shed too near or too far from the race plate

If you find these three loom parts generally in bad condition, it's a sure bet that the over-all loom motions and hidden parts are in run-down condition.

Better Fixing Corrects Faults

A more-thorough study of loomfixing practices as they are applied to four basic loom motions will correct many weaving faults and let you run your looms at recommended speed:

1. Lay motion. When loom speed is increased, the first trouble comes from shuttle boxing. Checkstraps have to be reset and binders adjusted. Worn or rough shuttle-box leathers have to be replaced.

Shuttles are thrown out of warps, and break-outs are made. Repairs to the parallel motion necessarily follow. Worn parallel tongues and pins have to be replaced. And it's often necessary to replace the parallel and parallel shoe.

Loom Conditions Must Be Improved

2. Take-up. Worn take-up gears and studs, dirty lint-clogged gears, and improperly meshed gears show up rapidly at loom-speed increases. You'll have to tear down the gear train, discard worn parts, clean reusable parts, and reset the gears properly.

3. Let-off. At loom-speed increases, let-offs usually show defects: they either don't let off or they let off irregularly to cause wavy cloth and starting marks when a loom is restarted. Connecting rods, pallet lever, and pinion have to be reset. And often the let-off has to be torn down, cleaned, rebuilt, and reset.

4. Picking motion. Worn parts in the picking motion show up rapidly at increased speed. The trouble here usually centers around worn pick-cam toes, pick balls, lug straps, and lug-strap connections.

These four defective loom motions show up at low loom speed in low efficiency and high seconds. And eventually the parts fail. Higher loom speed only accelerates the failure.

Loom-parts improvements of the past few years contribute to higher loom speed: (1) spring-type crank arms, (2) aluminum lays, (3) endless checkstraps, (4) better shuttle checks, (5) better shuttles, (6) better harness motions, and (7) many antifriction bearings.

When Is Loom Speed Too High?

Excess speed becomes evident when lay swords break, the lay runs erratically, numerous shuttles split at the transfer, head gears loosen, and the loom vibrates greatly.

Many mill men now running their looms considerably below loom manufacturers' recommendations think they are running the looms at the highest possible speed that is economical over a long period. But few of these mills have methodically recorded the results of raising the speed of a group of looms.

A common method of raising loom speed is to change motor gears and pull on the shipper handle. Pretty soon shuttles are thrown out of looms, there are warp break-outs in large numbers, loomfixers are several flags behind, and weavers have a lot of stopped looms.

Seconds go up, and production goes down. After a few

weeks, the looms run better but fixers and weavers still have a hard time.

The supply bill for loom parts is checked, and it shows a big increase when compared with looms still running at lower speed.

Management men discuss the existing condition and decide: more cloth is produced at high speed; but the supply cost is greater, everyone is working harder, and it appears that looms are not holding up.

Then loom speed is cut back to the former low speed. No records are kept, but management men are convinced that their looms will not run at the recommended speed.

Loom Settings Must Be Changed

When you consider increasing loom speed, the increase must be based on good judgment and the increase must be reasonable.

First, increase the speed on only one section of looms. If loomfixers change the motor gears for the speed increase, have them change only one or two looms per shift on each section, according to the trouble you have immediately after the change. In this way, the fixer will be able to correct necessary loom settings for the higher speed without getting behind with his routine work.

One setting that always has to be made on looms in good condition is to give more clearance between the battery transferrer and the bobbin in the shuttle at the transfer. And you may need a pick-cam toe designed for higher acceleration. Thread-cutter settings have to be rechecked and set more accurately.

In general, all loom motions will operate efficiently at high speed. But the motions have to be set to close tolerances, which requires a little more time, effort, skill, and interest than to set them haphazardly.

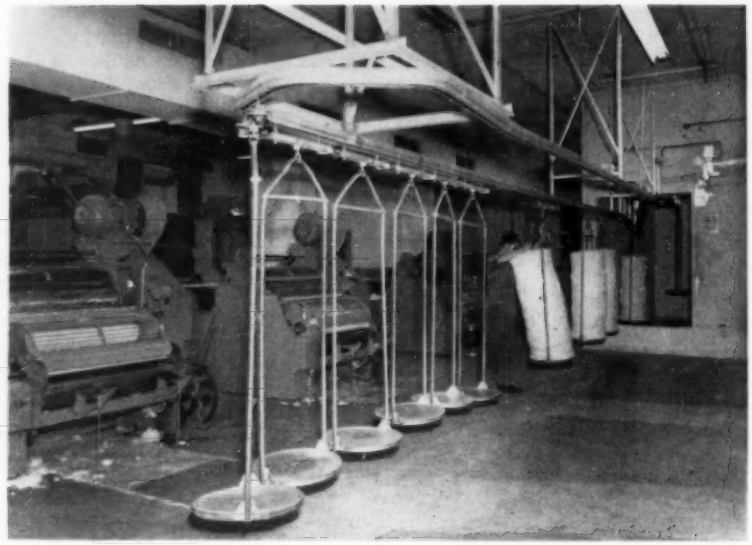
How To Measure Your Success

After a speed increase, make several loom-stop checks to find out what is causing your stops. Break down the check into yarn stops and mechanical stops. Then analyze your yarn stops to see how mechanical defects are contributing to yarn breaks. See that your loomfixers correct this trouble.

Fine-yarn fabrics may show more yarn breaks than coarse-yarn fabrics. Then plan your fabric layout so that all yarns of one type are together, and run your coarse yarns at higher speed. In this way, you may have several sections of looms running, say, 10 ppm. faster than other sections.

Mill No.	X-2 Looms (Width ins.)	Fabric woven	Loom speed (ppm.)
1	42 44	Industrial fabrics, 1.60 to 5.50 yds. per lb.	175
2	46	Five-harness warp-face sateen	172
3	44 46	80-square sheeting, broadcloth	183
4	44	Heavy twill	178
5	50	Sateen, corduroy, cord fabrics	168
6	46	Combed-yarn chambray	188
7	46	Corduroy, 1.94	184
8	40 46	Combed-yarn goods	186 172
9	44	Oxford, broadcloth shirting	223
10	50	Broadcloth, batiste, 134x68	172
11	52	Corduroy, 1.82, 87x128	173
12	46 44	Drills, twills	177
13	40	Print cloth, bagging	192
14	46	80-square	180
15	40	Print, industrial cloth	192

LOOM SPEEDS from 15 mills visited by TEXTILE WORLD editors show that most mills run X-2 looms at approximately the same speed. But Mill No. 9 is away out front with 44-in. looms running 223 ppm. Mill No. 6 is running its looms at a more-conservative speed but is outproducing Mill No. 8 almost 10% on the same type of loom and on similar fabrics; efficiency at both mills is 97%; Mill No. 6 has 2½% seconds; but Mill No. 8 has only 1½% seconds. Mills Nos. 13 and 15 are running coarse goods at a fast clip of 192 ppm.



LAPS WEIGHING 45 LBS. are loaded on an unpowered section of the track in the picker room.

Australian LAP CONVEYOR *Cuts Handling Costs $5,000 a Year*

Bradley Cotton Mills Ltd., Sydney, Australia, has developed a lap-conveying system that—

- **Moves laps at low cost**
- **Sorts laps according to cotton blends**
- **Operates partly by power and partly by gravity**

By ALICJA GROBTUCH, McGraw-Hill World News

A SELECTIVE CONVEYOR SYSTEM that transports picker laps in either a vertical or horizontal position is saving an Australian mill about $5,000 a year in handling costs.

The total cost of the installation, including building alterations, was $12,000. Maintenance, on contract with the conveyor manufacturer, costs $165 a year.

The new system is in use at Bradford Cotton Mills Ltd., Sydney, Australia.

Bradley, a multistory plant, was faced with the problem of getting its picker laps from the first-floor opening room to the cards on the second and third floors of the building. Floor space for lap storage was scarce, and manual handling of the laps damaged them.

Another problem was how to keep from mixing the laps. Bradley produces laps from two different blends of cotton on its two lines of pickers, and it is essential that the laps be kept separate.

Laps Are Separated

The conveyor system, developed by the mill from a light-duty overhead chain conveyor, was arranged so that the operator can set a selector pin on the conveyor that actuates a "sorting switch," which in turn directs the laps to proper storage lines where they remain until needed.

Another feature of the lap conveyor is that it has powered track sections for use where power is needed and unpowered sections where gravity or light manual effort operates the carriers. The entire system requires only one ¾-hp. motor.

In the picker room, the laps are loaded onto the conveyor on an unpowered-track section, and the selector pin is set by the operator. The conveyor is then raised to the next floor by shoving it onto a powered section of the track.

The automatic feeder mechanism, located inside a brick tunnel and cut off from the opening room by a fire door, directs the conveyors through the selector switch onto two gravity-storage lines where the laps are stored separately according to blend.

Conveyors Returned By Gravity

When the laps are needed, they are pushed manually along an unpowered section of track to the individual card. Empty conveyors are returned by gravity to the storage area where they are picked up by a powered section of track and returned to the picker room.

Conveyors at Bradley run about 8 ft. per min.

Heat-Setting Affects Dichroism—

Polyamide fibers must be heat-set prior to dyeing within a carefully controlled temperature range if dichroism is to be avoided. Dr. Karl Neufgang, Farbenfabriken Bayer A.G., recently reported that the safest temperature range for the heat treatment lies between 374 and 383° F. and should last for 20 secs.

The affinity of disperse dyes for heat-set polyamide fibers varies greatly in proportion to the degree of heat applied to the fabrics before dyeing. In the 410 to 428° F. range, dye affinity is much greater; but the rate of increase rises so sharply that minor variations between the temperatures achieved at different points across the fabric give disproportionate differences in dyeing quality.

Uniform heating of the entire fabric is necessary within the recommended range. If the surface is overheated in relation to the interior of the fabric, a dichroic effect will be produced because of the subsequent variation in dye affinity.

20 Nations Compare Test Methods—

Colorfastness tests and fabric-shrinkage tests will be discussed by Technical Committee 38 of the International Organization for Standardization when it meets in Lucerne, Switzerland, next month.

The results of many interlaboratory tests on the effects of duration and load in the washing cycle will be reviewed. Tests up to this time appear to coincide with U. S. views that favor a 60-min. washing cycle. The U. S. delegation is expected to press for international acceptance of the 60-min. test. The U. S. is also interested in gaining acceptance for American proposals for colorfastness to both natural and artificial light.

Dye Sulfur Colors Minus Sulfide—

Cotton can be dyed with sulfur colors without using sodium sulfide, according to British Patent 787,878. The fabric is padded in a water-soluble reaction product of the sulfur dye with a salt of sulfurous acid and then heated to 80 to 120° C. to fix the dye.

As an example, 10 grams of Immedial Yellow Brown G, which has been reacted with sodium sulfite to form a water-soluble product, is dissolved in 1,000 ml. of water. The fabric is padded in the solution and then heated to 120° C. in oil. Fixed dyestuff is 5.8% of the fabric weight.

Resin and Heat Increase Nylon Life—

Nylon covers for hot-head presses will last up to three times longer if they are treated by a process recently developed in England.

The nylon fabrics are impregnated with a resin based on tannic acid and formaldehyde and are then exposed to a temperature of 412° F. for 5 mins. Tests showed that the treated fabric had a bursting strength of 36 psi., compared to 36.5 psi. for untreated, unexposed fabric.

The finish is washfast, and treated goods that were washed five times at 110 to 120° F. for 30 mins. retained a bursting strength of 34.5 psi. after re-exposure to the high temperature.

Even after 10 commercial launderings, the treated fabric retains over 50% of its initial strength; but untreated fabric laundered in this way and exposed to 412° F. for 5 hrs. was virtually destroyed.

The treatment produces a brown coloration of the fabric and reduces tear strength slightly, but these factors are not important in the end use.

Research Aids Wool Processing—

At the Gordon Research Conference held last month at New London, N. H., Dr. Helmut Zahn, Director of Wollforschungsinstitute, Aachen, Germany, pointed out that a deeper understanding of basic wool chemistry is necessary to wool processors.

Dr. Zahn's paper emphasized the research work done by the institute on wool storage, wool scouring, the steaming of tops, and dyeing with neutral-dyeing premetallized colors. Investigations into permanent pleating of woolen fabrics with the aid of thioglycolic acid were also undertaken.

Wool processors have long felt that soap-and-soda scouring tends to weaken wool, but Dr. Zahn's findings contradict this theory. Actually, he reported, wool fiber is strengthened by this type of scour because an internal polymerization is brought about.

This process is called disulfide exchange and only recently has been accepted as a part of wool chemistry. Further evidence piled up from tests indicates that all wool processing in which slightly alkaline conditions prevail should produce good results. However, excess alkalinity must be avoided or disulfide bonds will be destroyed.

Dr. Zahn pointed out that wool carbonizers should be sure that the wool is thoroughly neutralized after carbonizing. The peptide bonds that are broken during the acid treatment must be restored by neutralizing or trouble can be expected in dyeing and other processes that follow.

Modified Cotton Has New Uses—

Last month, Dr. Carl Conrad, chief chemist at the plant-fibers laboratory of the Pioneering Research Group of the Southern Regional Research Laboratory, USDA, New Orleans, told Gordon Research Conference members that chemical modification of cotton will extend its usefulness in many fields.

His paper summarized the previous work done on acetylation, cyanoethylation, carboxymethylation, and hydroxyethylation of the fibers in reference to improved resistance to rot, heat, and flame resistance. Starting from this point, the more recent work has been along the lines of determining other useful physical characteristics that come from chemical modification when the fibers are made into yarns and fabrics.

For instance, cyanoethylation improves the flat-abrasion resistance of cotton by at least 75% but reduces flex abrasion. At the same time, the tear strength is improved 30%.

Low-twist yarns made of cyanoethylated cotton are generally stronger

than similar yarns made of untreated cotton, but high-twist yarns made of treated cotton are weaker.

Carboxymethylation of cotton fiber increases moisture regain to about twice that of untreated cotton. The linear density, breaking load, and elongation at the break are increased by this modification, but fiber-cellulose density and length decrease.

Generally, chemical modification improves the mechanical properties of cotton as well as its resistance to rot and heat.

Chemical modification can be used to tailor cotton to meet many specific end uses for which untreated fiber may be unsuitable.

Powdered Resins Bond Fibers—

A recent British patent was granted for a method of binding nonwoven fabrics by means of mixing thermoplastic material in powder form with the fibers while the web is being formed.

Resins such as the copolymers of vinyl acetate and vinyl chloride are directed through a loose mass of fibers by an air blast. The resin particles are trapped by the fiber mass, which is then heated by hot air to 340° F. to plasticize the resin. The batt or web is then cooled with cold air to 90° F. to set the bonds made between resin and fibers.

Did You Know . . .

. . . **that you can prevent overreduction of anthraquinoid vat blue dyes** by adding triethanolamine and sodium nitrite to the print paste? Similarly, overoxidation is prevented by using alkaline hydrogen peroxide as an oxidizing agent or treating the goods first in cold water and then in hot water at 160 to 185° F.

•

. . . **that the condensation of urea-formaldehyde and melamine-formaldehyde by means of infrared rays** varies considerably according to whether visible or dark radiation is used? Dark radiation in the 3μ range polymerizes the resins more rapidly with certain inorganic catalysts. Visible radiation is slower and is apparently less affected by the type of catalyst used.

•

. . . **that the continued use of synthetic detergents in home laundering** causes an accumulation of calcium ions? Even moderately soft waters will produce the effect, which is responsible for graying if white fabrics are subsequently washed with soaps that precipitate the calcium. The addition of polyphosphates, sodium metaphosphate, or TSPP to the soap scour will prevent the trouble.

•

. . . **that free formaldehyde left in goods** is not necessarily to blame for the development of odors in resin-finished fabrics in storage? A recent German report holds that hydrolytic cleavage of the resins that are retained even after thorough washing is responsible for the development of free formaldehyde. Traces of catalysts left in the fabric and high humidity increase the effect.

NEW DYES AND CHEMICALS

Vat Dye

Ponsol Brill. Violet 4RND Paste . . . is particularly suitable for package and beam dyeing of cotton or rayon, on which it yields clear, bright violet shades. The dyeings are resistant to light, chlorine, washing, peroxide bleaching, drycleaning, and pressing. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-1 on Reader-Service Card

Direct Dye

Diphenyl Fast Navy Blue ARL . . . produces rich, bloomy shades of navy at 3% concentration on cotton or rayon fabrics. Fastness to light and washing is generally superior to the low-cost navies that are commonly used for commercial colors. Lightfastness is actually improved by resin finishes. The dyestuff is dischargeable, reserves acetate well, and is level-dyeing. Geigy Dyestuffs, Div. of Geigy Chemical Corp., Ardsley, N. Y.

Circle D-2 on Reader-Service Card

Cationic Softener

Avitex Q . . . produces a soft, pliable, well-lubricated hand on cotton and man-made fibers without yellowing when exposed to atmospheric oxides of nitrogen.

The product disperses readily in water at 140° F., and 90 to 100% will exhaust onto fibers from a dilute bath. Pad applications are also practical. The softener is suitable as a self-finish or can be used in conjunction with resins to improve sewability and tear strength. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-3 on Reader-Service Card

Moothprofing Agent

Larvatex . . . is an emulsifiable concentrate based on Dieldrin that is now available in commercial quantities. The product is effective in preventing moth damage to all animal fibers and meets ASTM and USDA standards for permanent mothproofing after repeated drycleanings and launderings. Application is by the exhaustion method in the dyebath. Hart Products Corp., 1440 Broadway, New York 18, N. Y.

Circle D-4 on Reader-Service Card

Metallized Dye

Capracyl Green 2Y . . . produces bright, yellowish-green shades on nylon and wool and makes possible many shades previously unobtainable with this class of dye. The shades have good fastness to light and wet processing. The dye is suggested for suitings, carpetings, and upholstery fabrics and can be applied to raw stock, yarn, or fabrics. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-5 on Reader-Service Card

Vat Dye

Ponsol Yellow 6GL Paste . . . has outstanding fastness to light, washing, chlorine, and peroxide bleaching. The color is exceptionally bright and is suitable as a self-shade or for the production of chartreuse, mint, and similar shades. Application is by pad-steam, pad-jig, or other usual methods. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Circle D-6 on Reader-Service Card

Soil Retardant

Formula X . . . has been developed to retard the soiling of nylon carpeting. The product is applied in the dyebath or can be used on carpets already in service. At present a proprietary product, the soil retardant probably will be made available to the industry. Cabin Crafts, Inc., Dalton, Ga.

Circle D-7 on Reader-Service Card

Softener

A-C Polyethylene 629 . . . was developed especially to improve the hand and wearing qualities of resin-finished fabrics. The product is supplied in emulsified form and is durable to normal laundering procedures. The product does not discolor, does not affect the light-fastness of dyes, and resists scorching and sunlight. Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

Circle D-8 on Reader-Service Card

Discharge-Printing Assistant

Algepon PD . . . produces pure white discharges on phthalocyanine-type pigments when it is added to conventional print pastes. The product also works effectively on other pigments and is compatible with other elements of discharge-print pastes.

For phthalocyanine pigments that are difficult to discharge, at least 10% of the assistant should be added to the print paste. Pigments that are less difficult to discharge require considerably less. Pigment-dyed goods can be stripped by adding 1% of the material to the usual hydrosulfite-caustic stripping baths. Arkansas Chemical Co., Inc., P. O. Box 210, Newark 1, N. J.

Circle D-9 on Reader-Service Card

Starch Ether

Solvitose HDF . . . may be used in conjunction with small amounts of resins to give durable body and stiffness to cotton or rayon fabrics.

The product is soluble in cold water and requires only agitation to produce a stable solution. Suggested formulations include 1 to 6% of Solvitose HDF, 15% resin (based on the weight of the Solvitose HDF) and the necessary amount of catalyst.

The material is also useful to add body to crease-resistant finishes. Morningstar-Paisley, Inc., 630 W. 51st St., New York 9, N. Y.

Circle D-10 on Reader-Service Card

Softener

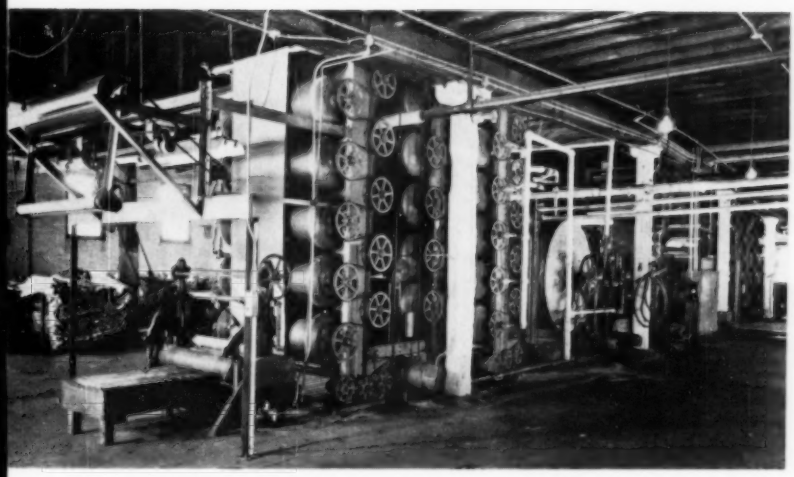
Lauramine #20 . . . is an anionic paste-type softener recommended for lubricating and softening package-dyed yarns before knitting, or for finishing cotton fabrics. The product forms a stable emulsion of fine particle size and will not yellow or affect the shade of dyed fabrics. Laurel Soap Mfg. Co., Inc., Tioga, Thompson, & Almond Sts., Philadelphia 34, Pa.

Circle D-11 on Reader-Service Card

Dye Carrier

Carrier LB . . . is supplied as a self-emulsifying liquid that is effective in dyeing polyester or triacetate fabrics. The carrier is relatively nonvolatile and greatly improves the rate of dyeing. Pleat formation or retention are unimpaired by the product, and colorfastness is not affected. Lustre Fibers Ltd., P. O. Box 65, Broadgate House, Coventry, England.

Circle D-12 on Reader-Service Card



MODERN FINISHING RANGE is designed to handle several finishing operations. Goods can be padded twice in one run with finishing materials with intermediate drying or padded and back-starched in one run. Cans are Teflon-coated to cut down the tendency of heavy starch solutions to pick off.

How Ohio Falls Finishes INDUSTRIAL FABRICS

Ohio Falls, Inc., Louisville, Ky., combines 60 years of experience with modern equipment and methods to finish abrasive cloths, tenting, and awning ducks. Special finishes include:

- **Mildewproofing**
- **Flame-resistant finishes**
- **Water-repellent finishes**

FINISHING INDUSTRIAL FABRICS takes as much skill and know-how as is needed to produce more-glamorous types of goods. Procedure is somewhat different from that employed to finish domestic or apparel fabrics because of end-use requirements.

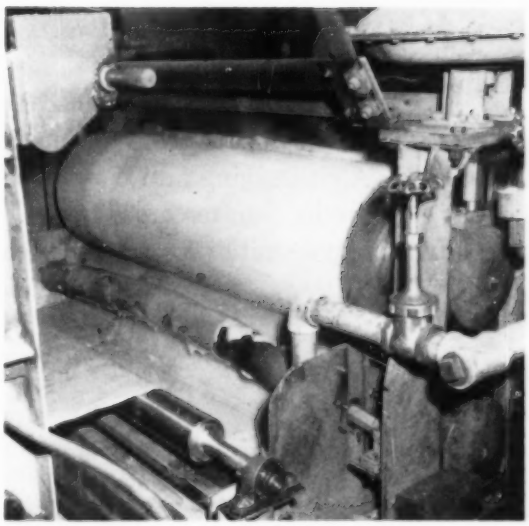
One of the volume lines produced at Ohio Falls, Inc., is abrasive fabrics. These are 1.97- to 2.50-yd. drills and 3.50-yd. jeans for the most part. They are used as a backing for abrasive grits.

The first step in preparing these fabrics for their end use is to brush them thoroughly to remove loose lint. Unless the cloth is going to back extremely fine grits, it is not singed.

The brushed goods are then run through a dual-purpose finishing range that includes a starch mangle, a stack of 30 dry cans, another regular starch mangle, and a back-starching pad, followed by another stack of 30 cans.

Abrasive cloths require a very stiff finish; and to get a suitable hand, the plant applies a mixture of starch, gum, and hide glue to the goods. The job is done in one run on the range. The fabric is run through the first starch mangle, dried, and run through the second starch mangle to pick up the balance of the finish. The final drying on the second stack of cans completes the job.

The finishing range is set up very flexibly so that it may be operated as a double unit or two single units.



STARCHING PAD has pneumatic loading and is supplied with viscous finishing mixes by a pumping system.

Abrasive cloths that require dyeing can be dyed and finished in one run on the range.

The awning fabrics may be treated by several different methods according to their end uses. A good deal of this class of goods is mineral-dyed. The primary shades are khaki and pearl gray in various depths.

Ohio Falls produces mineral shades on a continuous range. For mineral khaki, the goods are saturated in a solution of ferrous sulfate and dried on cans. They are then saturated in a solution of caustic soda that precipitates

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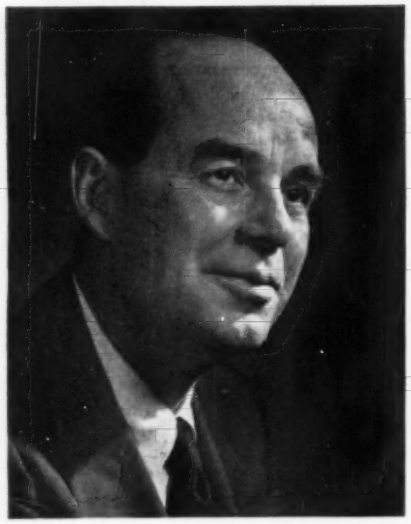

Mr. Arthur B. Edge, Jr., President
Callaway Mills Company
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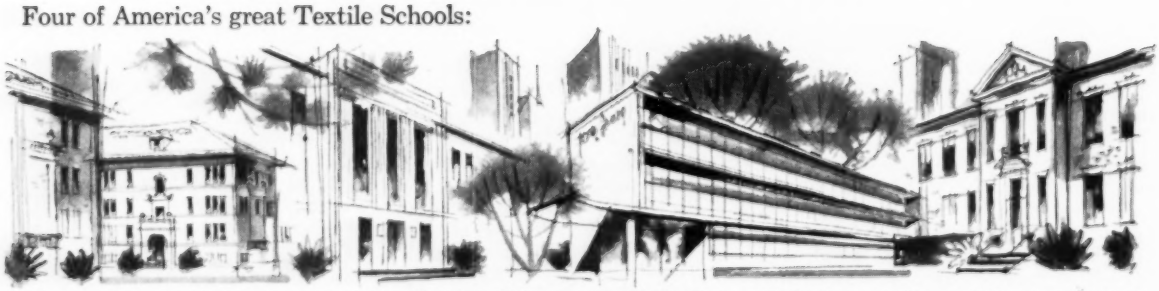

Clemson Agricultural College
Clemson, South Carolina

North Carolina State College
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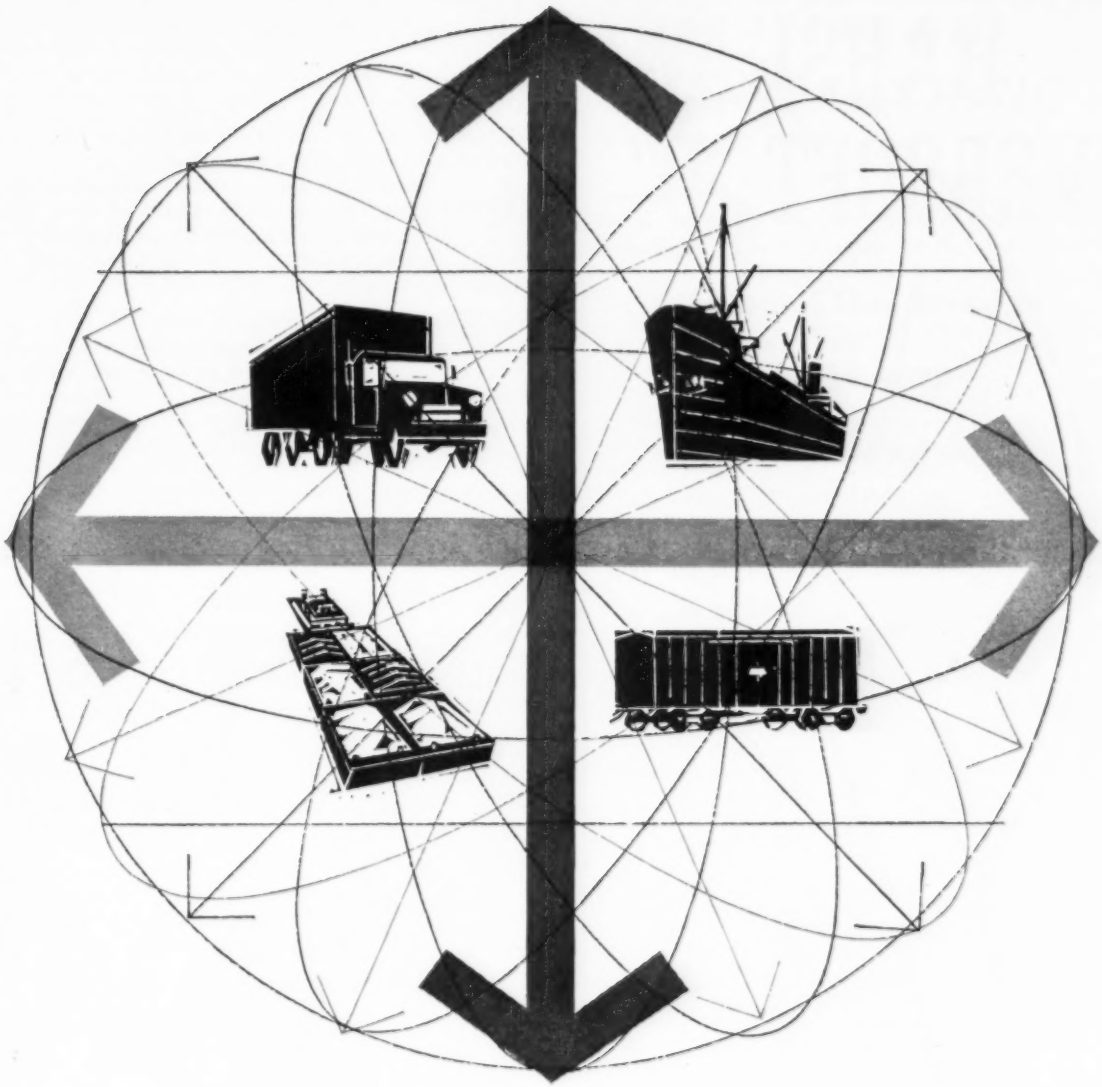
Georgia Institute of Technology
Atlanta, Georgia

Alabama Polytechnic Institute
Auburn, Alabama



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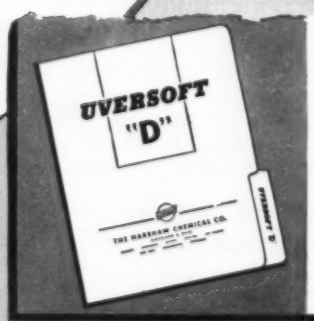

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insoluble iron oxide in the fiber. Two wash boxes separated by squeeze rolls insure ample exposure to the alkali. The excess caustic is washed out, and the oxidation process is completed in following wash boxes.

The plant also produces considerable amounts of vat- and naphthol-dyed goods for tents, beach umbrellas, and other outdoor uses that require bright, fast colors. The primary method used to produce vat colors is to pad the pigment on the goods and then transfer them to jigs for the usual reducing and oxidizing operations.

Goods that are going to be dyed are first scoured on the jigs with a detergent, soda ash, and caustic. If they must be bleached, they are then padded in a peroxide-silicate solution and rolled up. After the goods stand for 8 to 10 hrs., they are returned to the jigs and washed out in several ends of hot water, which is followed by neutralizing and a final rinse.

Mildewproofing Is Important

Mildew is one of the most important factors that affect the life of canvas goods in outdoor applications. Until recently, most mildewproofing products had some effect on hand or color or were not durable enough to be of much value.

Ohio Falls applies a proprietary product that has no noticeable effect on hand or color of the goods and is effective against most forms of bacterial attack for long periods of time.

The material is applied in a simple padding operation followed by drying. Binders incorporated in the product hold it in the fabric and resist the leaching effect of weather.

Treatments Can Be Combined

A great volume of canvas goods is given both mildewproofing and water-repellent treatments. Ohio Falls uses a wax emulsion-aluminum salt product to get a good water-repellent effect and adds the mildewproofing compound to the same bath at a rate of 4 to 5 lbs. per 125 gals. of mix.

To get a flame-resistant finish, the plant applies a mixture of boric acid and borax to the fabrics in a pad and then dries in the salts to give good resistance to ignition and afterglow. The finish is suitable for applications where washfastness or weather resistance are not required.

The usual practice is to get a 10 to 15% add-on of boron salts based on the weight of the fabric. A satisfactory ratio of borax to boric acid runs about three parts of borax to seven parts of boric acid. The borax inhibits ignition, and the boric acid acts as a glow retardant.

Combine Chlorine and Peroxide For Better Cotton BLEACHING

A recently developed bleaching method features a chemic treatment followed by a peroxide bleach at reduced chemical concentration. Advantages claimed for the process include—

- **Small additional investment**
- **Lower chemical costs**
- **Better whites**
- **Excellent fluidities**

BY COMBINING THE EFFECTS of chlorine and peroxide, the Solvay activated hydrogen-peroxide bleaching process is able to produce thoroughly bottomed and bleached cottons at low chemical costs.

The usual prebleaching steps of singeing, desizing, caustic preboil, washing, and/or souring may be followed in the conventional two-stage peroxide process; or the more-recent single-stage process can be used to provide adequate preparation.

Whichever type of preparation is used, the next step is to saturate the goods for 1 min. in a sodium-hypochlorite solution squeezed out so that the goods carry 0.1% NaC1O. The fabric is piled into a J-box large enough to allow 10 to 20 mins. retention time and are pulled without washing into the regular peroxide saturator.

Peroxide Concentration Reduced

Depending on the goods and the degree of purity before bleaching, the peroxide concentration can be cut 25 to 75% over that necessary in the usual peroxide-bleaching formula.

The pretreatment with weak hypochlorite can also be given in batch processes. When goods are scoured in one kier and washed over into another for peroxide bleaching, they are saturated in hypochlorite and held over as noted just before loading into the peroxide kier.

If the entire process is done in one kier, the hypochlorite may be introduced after the goods have been scoured and rinsed in the kier. The hypochlorite solution is added and circulated for 10 to 20 mins. and then run out, and a peroxide-bleach formula at suitable reduction is added.

The combined oxidizing agents not only produce improved whites but the ash content is lower, the fluidities are essentially as low as those obtained with straight peroxide, and the whiteness retention is somewhat better. The absorbency of the goods is also somewhat better when the combination process is used.

What Happens Chemically

When the goods containing the hypochlorite are run into the peroxide solution, the reaction is:

$$NaClO + H_2O_2 = NaCl + H_2O + 2(O)$$

It is preferable to prepare the sodium hypochlorite by chlorinating caustic soda, leaving a small excess of caustic for stabilization. The small amount of free caustic left in the goods after bleaching helps to reduce the retention of silica residues from the peroxide formulation.

If the hypochlorite has been made by chlorinating a soda-ash solution, the residues in the fabric prior to peroxide bleaching are Na_2CO_3 and $NaHCO_3$. The $NaHCO_3$ is converted to Na_2CO_3 by the caustic in the peroxide formula, and soda ash promotes the depositon of silica complexes on the goods and the equipment. Also, it is more difficult to wash out than the caustic residues.

The combined bleaches do not present any critical steps; if the holding time for the hypochlorite-saturated goods is increased from 20 mins. to 180 mins., fluidities are still low, about 6 to 7. On the other hand, the peroxide-bleach retention time can be reduced to 15 mins. and still produce excellent whiteness.

The residual-metal content of samples bleached by the combination process is much reduced, particularly in the case of silica. Typical analyses show that under similar conditions, the activated hydrogen-peroxide bleach process leaves 60 ppm. of silica as compared to 340 ppm. by conventional peroxide bleaching.

Final washing can be done with moderately hard water without reducing the absorbency of the fabric when the combination bleach is used.

The process is available license-free to interested bleacheries.

From a report prepared by Solvay Process Div., Allied Chemical Corp., New York, N. Y.

Better dyeing

by **INTERNATIONAL SALT COMPANY, INC.**

How to Save 5-10% on Dyes ...Get Better Colors, Too

You can do it by using new Sterling TNA-5 Reagent in place of ordinary salt in neutral and alkaline dye baths. This remarkable reagent can cut as much as $375 from a monthly dye expenditure of $5,000 by making dyes "work harder." Compared with ordinary salt, Sterling TNA-5 forces *more* dyestuff out of solution and onto the fabrics being dyed. Thus, 5-10% less dyestuff is needed! Annual savings on dyestuff alone can amount to *thousands of dollars!*

Product quality, furthermore, is greatly improved. Finished fabrics are softer, smoother, richer in color, evenly dyed throughout. This is because TNA-5 is free of any calcium or magnesium impurities that can cause product harshness, "salt streaks," or uneven colors. Sterling TNA-5 is composed of fine, white, granular anhydrous crystals . . . and is classified as a chemically pure dyeing reagent. TNA-5 also has these additional advantages:

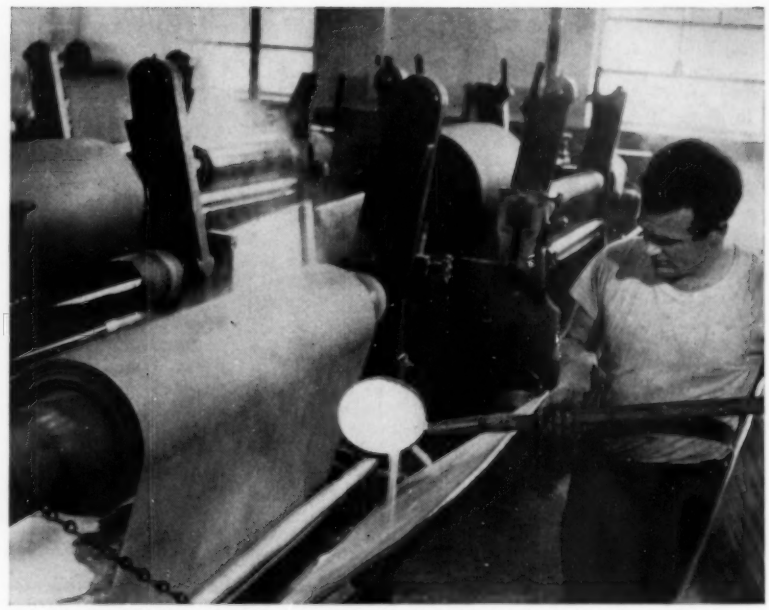
1. Costs less than Glauber's Salt. Sterling TNA-5, the purest dyeing reagent available today, actually costs *50% to 65% less* than Glauber's Salt (anhydrous sodium sulfate). Yet TNA-5 replaces Glauber's Salt on a pound-for-pound basis . . . and has an equally good exhaustion rate.

2. Extremely versatile. You can use Sterling TNA-5 in a neutral or alkaline dye bath to dye cotton, rayon, or any blend of these fibers with wool. TNA-5 is equally effective in staple, yarn, or piece-goods dyeing. And it is especially helpful in direct, sulphur, or naphthol dyes, where it produces excellent crock fastness and clear, brilliant colors.

3. Readily soluble. Sterling TNA-5 dissolves quickly and completely in hot or cold dyeing solutions. And the dissolved reagent soon permeates the entire bath. Thus, you can add dry TNA-5 to a dye bath without causing salt streaks in the finished product.

4. Works dry or in brine form. Whichever way you prefer to use Sterling TNA-5—dry or as brine—you'll get the same excellent results. Many users, however, make TNA-5 into brine in the automatic Sterling TNA-5 Dissolver. This permits economical bulk buying of TNA-5, plus the extra convenience of *piping* TNA-5 brine to the different dye baths.

5. Recommended by dyestuff manufacturers. Sterling TNA-5 has won the approval of many dyestuff manufacturers. The main reason is that this remarkable dyeing reagent lets their dyes show up better on a variety of fabrics. In fact, dyestuff manufacturers were instrumental in getting TNA-5 tested and accepted in a great many plants throughout the country.



Sterling TNA-5 is used exclusively by the Northern Dyeing Corp., Washington, N. J., to give the depth of color and luster they require for their famous Castle Creek Prints.

INTERNATIONAL SERVES ALL OF TODAY'S TEXTILE NEEDS

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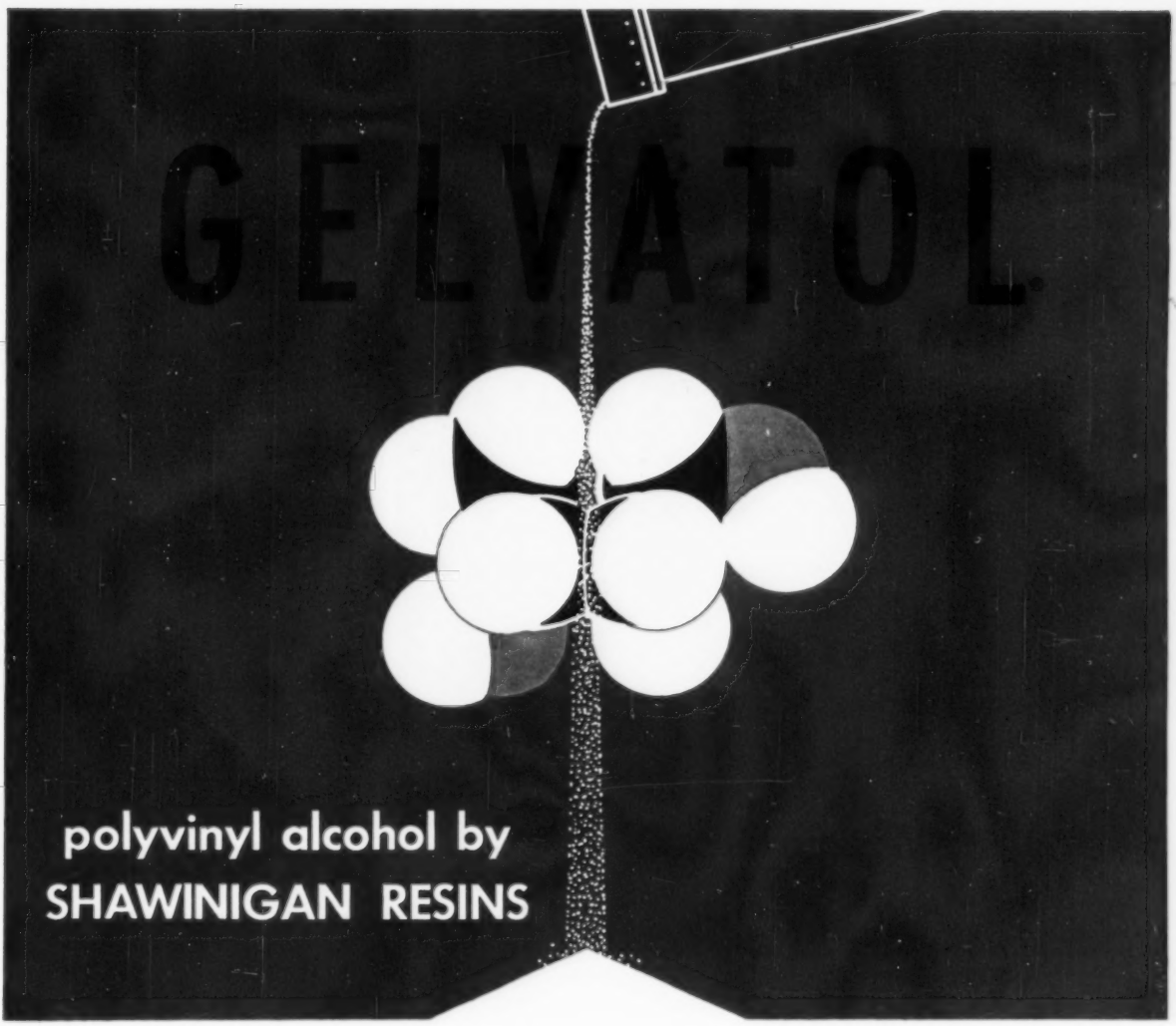

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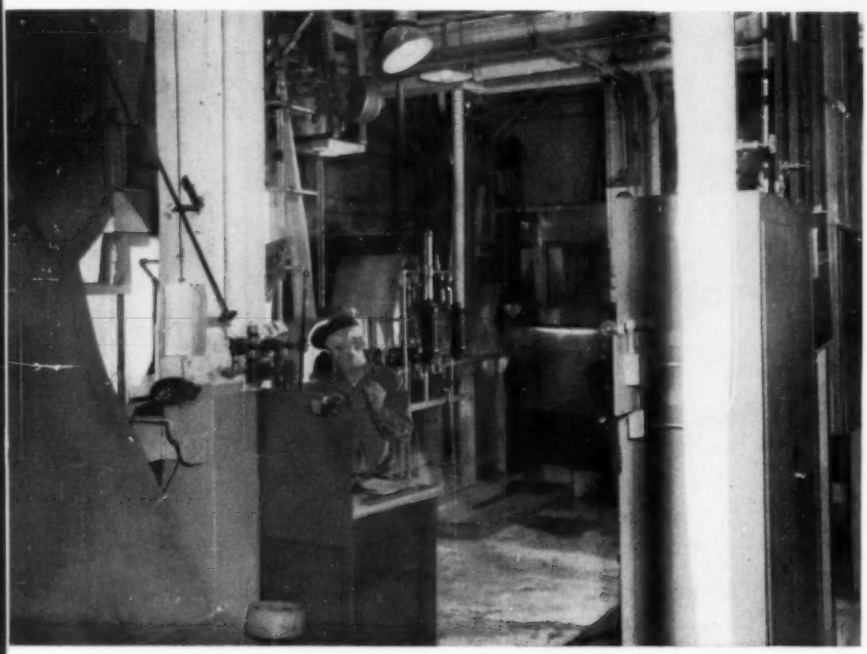
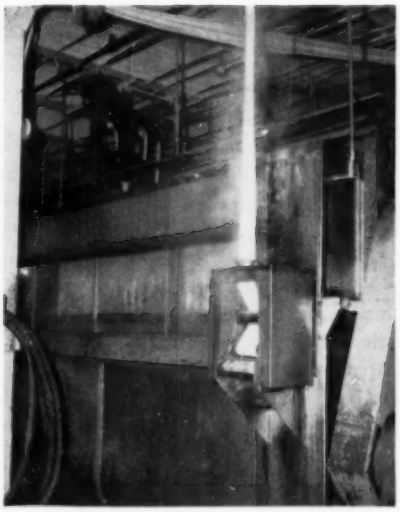


BLEACHING RANGE is compact, and it produces up to 200 yds. per min. of bleached fabric. One operator handles the bleaching and washing.

Joanna Modernizes
BLEACHING and COATING Methods

Joanna Western Mills has recently streamlined two important processes at its Chicago plant. By installing continuous bleaching and finishing ranges, the plant gets—

- More-uniform bleaching at less cost
- Better coated shade cloths with less handling



MODERN WASHERS use hot water and pressure-regulated squeeze rolls to do a good job of washing before and after bleaching.

CONTINUOUS OPERATIONS in bleaching and finishing have replaced stop-and-go methods at Joanna Western Mills, Chicago, Ill.

Although kiers are still used to prepare some fabrics, the plant is relying on a single-stage peroxide bleaching range to get several popular lines of goods into shape for finishing.

The fabrics that are most used for better-quality window shades are 4.00- to 5.00-yd. fabrics ranging in count from 64x60 to 68x72 and 80-square. Because they are to be coated, they must be free of motes, slubs, and weaving defects. Cuts may run as long as 1,100 yds. to reduce the number of seams that cause waste in the finished product.

Bleaching Is Rapid

Joanna's bleaching range operates at 200 yds. per min. and consists of a singe-desize unit, a short J-box for steeping, a medium-tension rope washer, the peroxide saturator, a large J-box, and two warm-water rope washers.

The cloth passes directly from the singer into a quench box carrying an enzyme and a nonfoaming detergent and is hauled into a short J-box where it is heated to 200° F. and retained for 30 mins.

From the J-box the goods are led into a rope washer that carries 15 to 20 strands of fabric through heavy squeeze rolls at the top. The washer is of the moderate-tension type; and because of the multiple-squeeze design, it is very effective.

The next step is to saturate the goods in a peroxide solution buffered with sodium silicate and also carrying small percentages of borax and caustic soda. After leaving the saturator, the goods are pulled up through a heating chamber and piled in the J-box, where they remain for 1½ hrs. at 204 to 206° F.

The bleaching is completed by pulling the fabric through two hot-water washers of the type previously described.

Joanna uses a combination of dry cans and a tenter frame for the primary drying of bleached goods. The tenter is necessary to bring the goods to width and to align the filling square with the warp.

For white shade fabrics, the goods are now ready to be put through a finishing range that coats both sides of the fabric, trims the edges, embosses the surfaces, and winds the material on rolls. They are then ready to be cut into window-shade lengths.

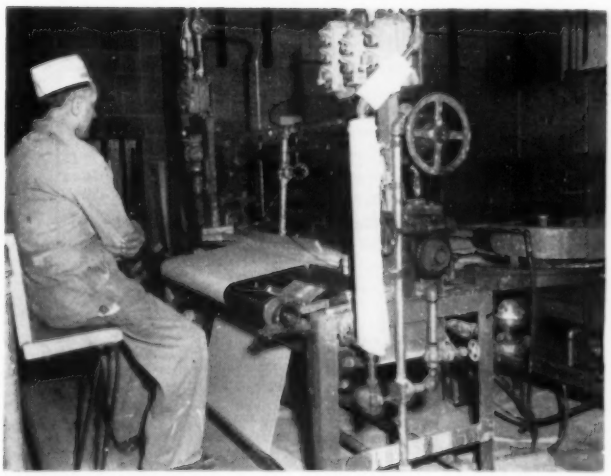
To get all this work done in one run, Joanna has set up a knife-coating machine ahead of a 90-ft. tenter on the second floor of a new building. The goods get their first coat of a vinyl compound and are dried on this range.

Then they pass through a slot in the floor to a knife coater set up ahead of a second tenter. Here the reverse side is coated, and the volatile matter is removed in the tenter drying chamber.

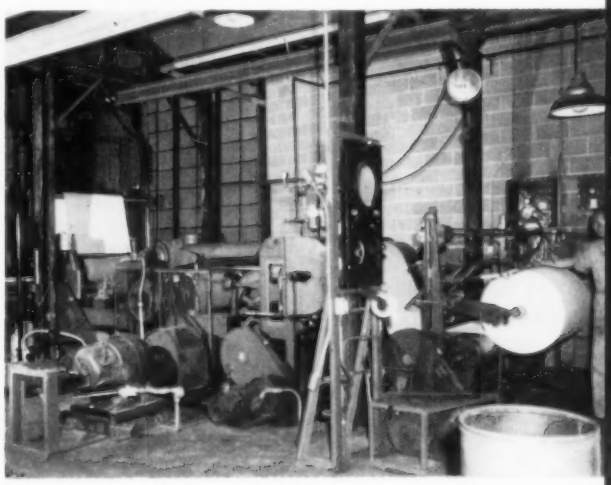
As the fabric leaves the tenter, the selvages are trimmed off and the goods are put through a pair of nip rolls synchronized with the tenter. These rolls act as a tension control between the tenter and the embossing equipment, which is next in line.

After leaving the nip rolls, the goods pass between heated rollers that warm the coating compound so that it will be easily embossed. The embossing calender impresses its pattern on the goods in the next step, and they are then led over cooling cans and finally to a continuous batcher.

Production of finished goods varies somewhat with the fabric and the coating that is applied to it, but normally Joanna can expect 50 to 60 yds. per min. from its finishing range.



KNIFE-COATING FABRIC with a vinyl compound precedes tentering. These goods have had a first coat on a tenter located on the second floor.



FINAL FINISHING, including trimming and embossing, is done on this assembly that is synchronized with the tenter frame.

How Modern Mills Improve Slashing Operations

Time after time, mills around the country report greatly improved slashing operations with TEN-O-FILM starches. Compatible with most adjuncts and available in a wide range of fluidities, TEN-O-FILM users praise its many unique operating advantages.

TEN-O-FILM is ready to use after cooking thirty minutes. Many mills find need for less plasticizer than with conventional starches. The stability of TEN-O-FILM keeps size usable despite prolonged heating and cooling. Size made with TEN-O-FILM does not congeal or "skin over" at lower-than-normal temperatures . . . it can be held for reasonable shutdown period without gelation.

TEN-O-FILM offers several additional features including unequalled clarity of film, economy in desizing and dyeing.

Our technical service group has had wide experience and marked success in adapting this versatile starch to the varied needs of many textile applications. The production advantages and process improvements achieved by TEN-O-FILM can be fitted to your needs by consulting our textile technicians. Contact our nearest sales office or write direct.

TEN-O-FILM® starches

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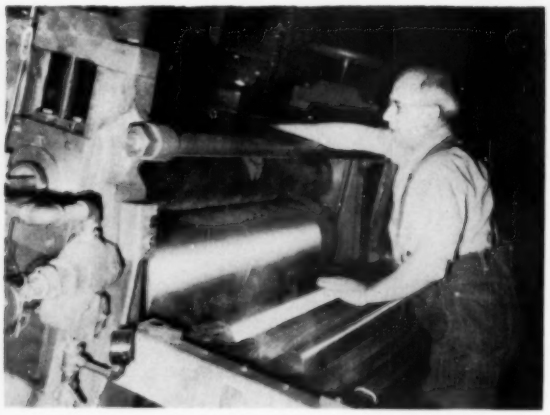
RAISED PATTERNS with prominent three-dimensional effects are produced by the engraved steel roll of this machine. Herman Wagner, senior partner, checks quality.



TEMPERATURE CONTROL is important to good embossing and is being checked here with a surface pyrometer. Usual temperature range is from 350 to 400° F.

Embossing Upgrades THERMOPLASTIC FABRICS

Wagner Embossing Co. converts ordinary fabrics into high-style materials by embossing. By making its own equipment, creating original designs, and keeping close control of the operation, the plant can offer customers—

- **Perfectly executed patterns**
- **Fast delivery of finished goods**

Wagner Embossing Co., New York, N. Y., combines several skills to produce embossed designs on thermoplastic fabrics.

Although not a large operation, Wagner makes the majority of its own machinery, except for the actual engraving of the steel or copper rolls used in producing the designs. The advantages of keeping machine construction within the plant include lower machine costs and close control of specifications.

The embossing operation is done on calenders that have a wool-paper bowl against which the engraved roll runs. The engraved roll is heated by gas, and there is provision for steaming the fabric lightly just before it enters the nip.

The pressure applied to the fabric varies with the type of engraving, the fabric, and the design. Pressure varies from 8 to 16 tons and is applied manually to the nip through conventional screws that are forced against the bearing blocks of the engraved rolls.

How Patterns Are Produced

Two principal types of engraved rolls are used by Wagner to produce patterns.

For flat patterns, which do not create a three-dimensional effect on the fabric, the plant uses a copper roll engraved in deep relief. The roll is forced onto a hollow mandrel, which is heated by a gas burner extending its entire length.

Raised patterns are produced from steel rolls engraved with dies to produce intricate patterns. These rolls are also heated by gas burners.

Setting up for a flat pattern is a fairly simple operation. The paper bowl is power driven, and the engraved copper roll rotates with it when contact is made by applying pressure.

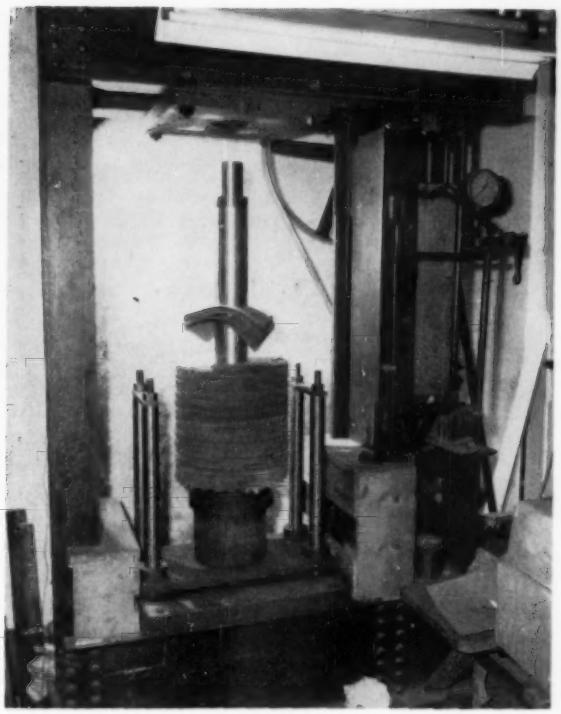
The engraved roll is heated to the proper temperature, which will vary from 350 to 400° F., depending on the fabric; and the goods are led through the nip at moderate pressure.

The hot, raised areas of the roll produce a flattened and glazed pattern on the fabric, which is wound up directly on tubes for shipment.

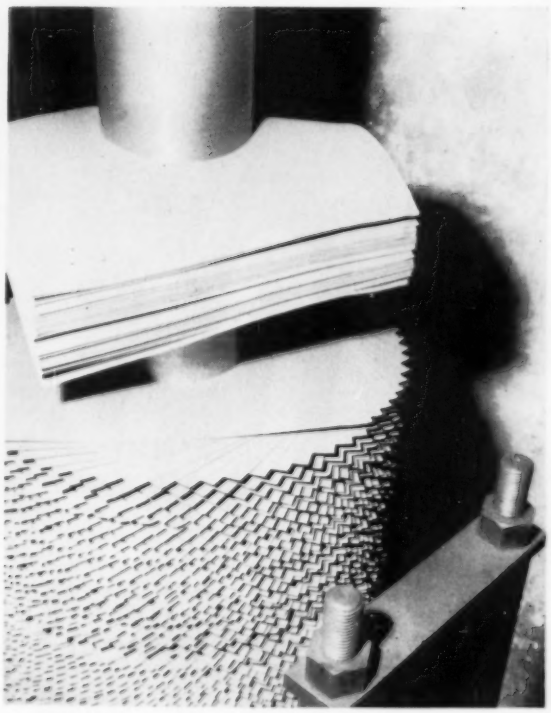
To get raised patterns, a somewhat more complicated routine is necessary.

How Paper Rolls Are Built

Wagner imports a special paper with a high wool-fiber content to build up the paper rolls for its calenders. The paper is cut into squares of suitable size, and a center hole large enough to fit over the roll mandrel is die-cut in each sheet.



BUILDING A PAPER ROLL requires up to 6,000 sheets of special wool paper compressed in several stages to a final width of 45 ins. Up to 300 tons' pressure is used to make a dense roll.



PAPER SHEETS are carefully placed at slightly different angles to each other so that the effect of paper grain is neutralized. After being compressed, the roll is finished in a lathe.

The sheets are slipped over the end of the roll mandrel which, with its lower retaining collar, is mounted upright in a hydraulic press. Each sheet of paper is rotated slightly in relation to its neighbor to neutralize any effect of paper grain.

When the stack has built up to the full width of the roll, usually 45 ins., pressure is applied and the paper is compressed to a height of 12 to 16 ins. The process is repeated several times, using pressures up to 300 tons, and requires 5,000 to 6,000 sheets of paper to complete a fully compacted roll 45 ins. wide.

Then the upper retaining collar is locked in place, and the roll is transferred to a lathe where the paper corners are trimmed off and the roll brought to the desired diameter and smoothness by a diamond-pointed cutting tool.

How Raised Patterns Are Produced

The mechanical setup to produce raised patterns must be very precise because the steel roll is geared to the driving paper bowl. The circumferences of the steel roll and the paper bowl must be in an exact ratio to each other, and this ratio must match that of the driving and driven gears.

The driving and driven gears are marked at one mesh point at the outset and always reassembled in the same way. Wagner uses paper bowls that have a circumference exactly twice the circumference of the engraved rolls.

Before any fabric is put through, the heated steel roll is brought in contact with the paper bowl, which has been thoroughly soaked with water; and the rolls are run together until a female pattern of the engraving has been produced on the paper bowl.

Then the pressure and temperature are adjusted to suit the particular fabric, and the machine is ready to produce.

Production speeds vary with the conditions that must be set up for each fabric and pattern but range from 5 to 16 yds. per min. The calenders are equipped with variable-speed drives.

Thermoplastics Predominate

Fabric embossing took a great stride forward when thermoplastic fibers came into the picture. By carefully balancing the three factors of time, temperature, and pressure, embossers were able for the first time to produce fabrics with surface effects that were durable to washing and drycleaning.

Wagner produces patterns on acetate, nylon, Orlon, Dacron, and Arnel. Recent constructions have included metallic yarns woven into silk and nylon fabrics.

The latest trend in embossed fabrics is to loom-finished materials made from yarns colored during spinning. These goods can be embossed directly off the loom and are then ready for shipment.

Embossing Increases Value

By passing a plain satin fabric through the embossing machine, a complex pattern can be impressed on the surface that lifts the original fabric from medium-price dress-goods material into the haute-couture class, where a well-styled jacket and skirt may easily sell for $100 to $150.

The design possibilities are practically unlimited and, barring accidents, a properly made engraved roll will produce hundreds of thousands of yards of patterned fabrics before the pattern is dimmed.

"Know" Men are Better Than "Yes" Men

Slashing problems can be as stubborn as burrs in a cocker's tail. It takes more than pat answers to solve them.

That's why Keever sales-service men are trained for the job, and on the job. Each is qualified to work closely with you right in your plant.

Specific mill problems are discussed in general staff meetings with other contact associates having combined experience of more than 120 years.

And behind this group are some 40 other textile engineers, chemists and technicians who serve as "know" men for Keever starches. Count on them to help you.

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Dow Latex 529K backs up carpeting with features that clinch sales. Used in back-sizing, this high-styrene latex is unmatched for imparting a firm hand that bespeaks quality and durability. And along with this improved stiffening goes firmer anchorage of loops in tufted carpeting. Dow Latex 529K has outstanding fadeometer stability and provides backings with light color and resistance to discoloration . . . extra selling features for every unit of latex used!

Dow Latexes are improving products and cutting costs in many varied textile applications, from carpeting to wall coverings. It will pay you to bring your coating problems to Dow. Contact your nearest Dow sales office or write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 2169B.

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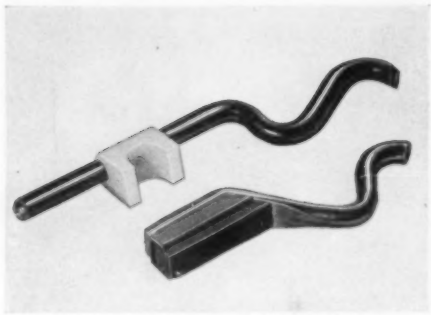
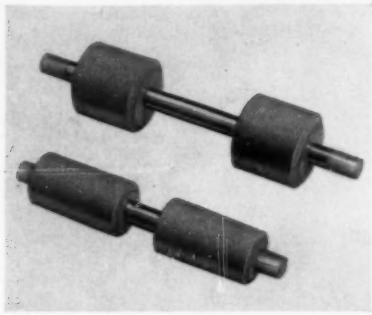
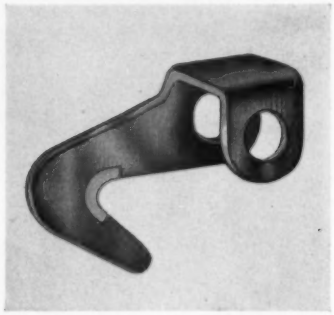


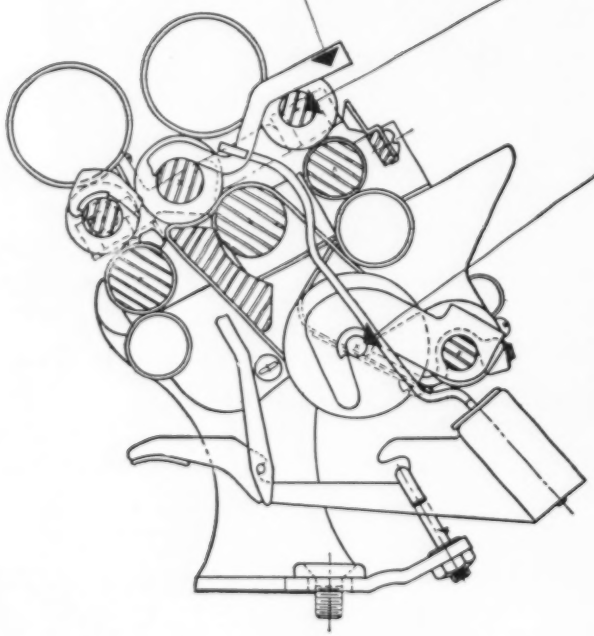
Back saddles of Nylon reduce arbor wear — do not need oiling.



Nylon end gudgeons on solid back top rolls require no lubrication — wear less.



Nylon inserts in tension roll supporting arms prevent wear which would spoil roll concentricity, apron alignment and even drafting of stock.



1. Reduce Wear
2. Eliminate Lubrication
3. Decrease Roll Picking

NYLON GUDGEONS AND INSERTS BY SACO-LOWELL

Saco-Lowell nylon gudgeons and inserts show little if any wear after long operating intervals. Since they require no lubricating, the absence of oil cuts dirty lint and subsequent roll picking to a minimum. This adds up to a very important saving in maintenance and operating costs.

Check your solid back top rolls, back saddles and tension roll supporting arms for worn surfaces. If any have developed, change over to these new nylon gudgeons and inserts. They're low in cost and high in return on your investment. "It *Pays* to use genuine Saco-Lowell Replacement Parts".

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Exit Interviews Can Help Your Employee Relations

• If you can find out the real reasons why an employee is quitting, you can often correct conditions that may be making other workers dissatisfied.

By **M. A. CROSS,** Director of Industrial Relations, Dan River Mills, Inc.

Conditions in today's labor market are far different from those during World War II, when many companies used exit interviews successfully to reduce high labor turnover rates. In the labor shortage of the postwar boom, the exit interview became a widely used technique.

In our present economy, turnover of industrial workers is not an acute problem; and to the extent that it does create difficulties, it is more likely to be caused by layoffs than by employees casually quitting in the belief there is a better job to be found next door or in the next town.

Does this change invalidate the exit interview? I think not, because the business of finding out why employees leave and what is on their minds at the time they are terminated can be of value in the search for better employee relations. And this search goes on whether business is good or bad and without reference to the level of our economy at a given moment.

There should be a shift in emphasis, however. Instead of aiming at the immediate objective of reducing turnover, there should be a switch to a search for facts that can provide valuable guideposts for the future.

How Accurate Information Helps

Let's see how accurate information can be helpful. Suppose there is a indication of a disproportionately large number of quits from a particular department or from a particular job. What is the reason? Exit interviews may develop that the working conditions are unsatisfactory, that training of new employees is inadequate and they are confused as to their duties and responsibilities, that a given job is too heavy or unusually monotonous, or that the pay level is out of line. These situations may not be easy to cure; but by means of exit interviews, you can determine the conditions that require correction and can work toward improvement.

Take the matter of records. Your personnel records are not complete unless you know the reasons why people have been terminated. To know that they quit does not tell very much. Maybe they were poorly selected in the first place—didn't have the educational background to meet the job requirements, were not physically strong enough for the job duties expected, or were of a temperament that was not suitable for the type of work to which they were assigned. This kind of information will be helpful to the employment office and to the supervisor in the selection of employees in the future. The exit interview is one technique you can use to get at that kind of information.

In summary, the exit interview represents an additional method of upward communications from employees to management. It is a way of finding out what problems exist from employees who are more likely to be frank about conditions that disturbed them. It is helpful in accumulating more-accurate personnel records; and in some few cases it may enable you to persuade a good employee to continue in employment, despite his original intention to quit.

Who Should Do the Interviewing?

Who should interview the employee at times of termination? There is something to be said for having the job done by a reasonably impartial person, someone in management who is not on the defensive about unsatisfactory conditions that might be reported by the employee. In most companies, this would probably place the responsibility on a representative of the personnel department.

Since this procedure is not possible in all situations and since there is substantial merit in exit interviewing by line-management personnel, perhaps the best solution is this: to have the employee's immediate supervisor, the general overseer, and, where feasible, a personnel-department representative, interview the terminating employee.

I believe there is merit in the procedure that you, as a supervisor, interview the employee when he leaves the company for these two reasons: first, he may be willing to be more candid with you than with someone less well known to him; and second, there is a distinct advantage in your hearing first hand about conditions that may have escaped your attention or whose signficance you may not have fully appreciated.

Surely learning the facts directly from someone who knows what he's talking about is more effective than receiving similar information, possibly watered down or biased, from a different source.

Try To Get the True Picture

The biggest problem in the exit interview, whoever the company representative, is getting a true picture of why the employee is leaving—the exact causes that led him to quit—or if the employee has been laid off or discharged,

CONTINUED ON PAGE 116

Garments courtesy of Browning King, Incorporated, Boston, Mass.

You'll weave these better and at lower cost with UNIFIL®

Many mills are proving it every day.* Cotton, spun and filament synthetics, textured and novelty yarns—all weave better with Unifil.

Unifil is a unique system of filling preparation — you get all the advantages of "weaving from a cone!" A Unifil-equipped loom winds, weaves and strips its own quills — *all automatically in a continuous cycle!* The result — clean, uniform quills — untouched by human hands — are wound from the same supply package.

And Unifil is versatile. You can make rapid fabric change-overs. You're always ready to meet product demand — *fast!* Contact your Universal Sales Engineer — he'll give you the full story of this quality-improving, cost-saving machine.

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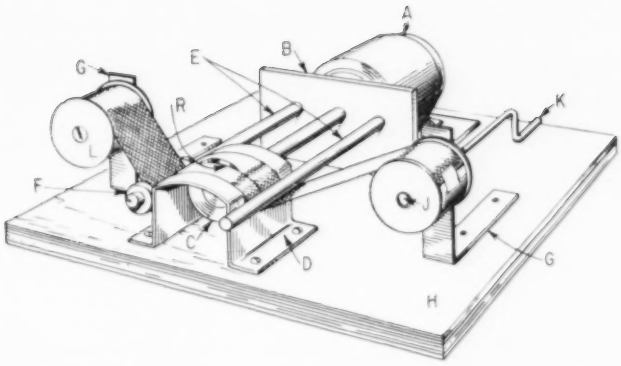


Here's an Easy Way To Trim Sock Transfers

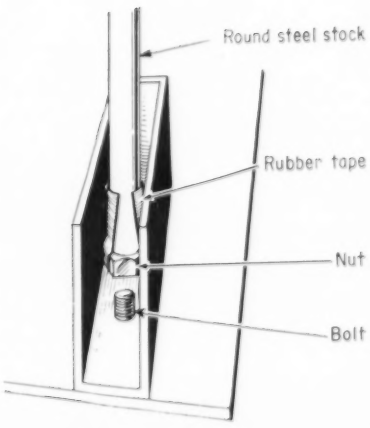
We sometimes had to cut a strip off the side of our sock transfers because certain words or style numbers were not to be transferred to the sock. This is a tedious job to do with a pair of scissors; so we built a machine to do the job much faster and neater.

The base *H* is a piece of ¾-in. plywood to which angle iron *B* is bolted. Screw the small motor *A* (with a long armature shaft) to *B*. Fasten the 1-in. circular blade to the end of the shaft.

Bend a piece of tin over the blade, and cut slot *R* in the tin to allow the blade to protrude about ⅛ in. Fasten the two ¼-in. round rods E to bracket *B*.

Screw the two brackets *G* to *H*. Drill holes in these brackets, and push handle *K* in one bracket. The wooden block *J* supports the transfer roll.

Place the roll of transfers on bracket *G*, and feed the transfers between the adjustable collars *F* over table *D* under the rods *E*. Fasten the transfer to block *J* with adhesive tape. Adjust collars *F* to suit the width removed from the transfer. (K-3985) *James Lavoie, Chelsea, Que.*

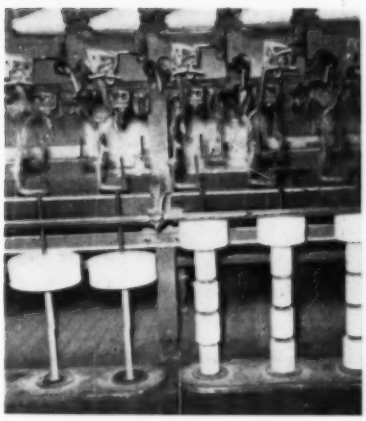


Rubber Tape Holds Nuts In Close Places

When you have to start a nut on a stud or bolt that's in a close place, a strip of rubber tape will make the job easy.

Cut a strip of tape 3 ins. long, and cut a hole in the center slightly larger than the threads of the nut. Place the hole in the tape over the hole in the nut, and stick the tape to a short piece of round steel stock just a little larger in diameter than the threads of the nut.

Then insert the round stock and nut into the close place as shown in the accompanying sketch. The nut will be held firmly in position while you screw it on the bolt or stud with the steel stock. (K-3814)



Two Ways To Improve Winding Operations

We wind ply yarn on Foster 102 winders from 12-oz. twister bobbins. Our single-yarn winding is done from Barber-Colman cheeses, which are much cleaner and better than spinning bobbins and much more economical to wind.

The size of the cheeses used to present quite a problem. After experimenting we found that the tridents used for handling cheeses have their spindles spaced the same as for the Foster winder; so we placed the tridents on the floor under the slubcatcher, put the yarn on, and started winding perfect cones, dye tubes, and regular tubes.

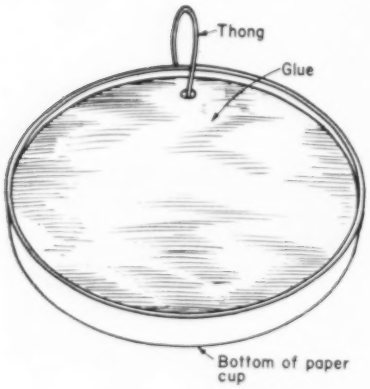
There are two ways to use this system:

1. Put two empty tubes under the cheese. This arrangement brings the cheese up close to the doffer rod.

2. Put the cheese on the bottom, and run down to the size you want to leave for a starter. Then put on other cheeses until the trident is full of starters. Remove the trident and replace it with an empty one.

The tension does not change under either system.

We had a visitor from another mill who decided to try out the idea, but he made a mistake when he got back to his mill. He thought we were winding from the bottom of the trident first and made quite a mess in trying to wind this way. (K-3935) *Kirby A. Wright, Edenton, N. C.*



Weavers Keep Glue Handy To Splice Yarn or Filaments

On some weaves using two or more plies of warp yarn, the splicing of yarns or filaments with glue is permitted. It is sometimes hard to obtain the right kind of glue in convenient form for this purpose.

Liquid glue can be used in this manner. Cut ¼ to ½ in. off the bottom of a paper drinking cup to form a small, shallow pan. Fill the pan with liquid glue, and allow it to harden. Drill a small hole near the edge, and insert a string loop for attaching the cup to the loom or apron.

The cake of glue can be kept handy and is ideal for laying split filaments, weaving in chafed edges, and tying broken ends on two or more ply yarns. (K-3613) *H. E. Wenrich, Berwick, Pa.*

Special Knife Removes Yarn From Shafts, Studs, Gears

At warp-outs, removing yarn wound around shafts, studs, and gears on a loom is a big problem. But a special knife will cut and remove the yarn easily.

Make the knife from an old kitchen knife, file, or machine-hacksaw blade. The hook end of the knife should be very sharp. The hook is inserted under the yarn to loosen it so that it can be cut. (K-3728) *H. E. Wenrich, Bloomsburg, Pa.*

Best-Kink Award for June

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 300 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

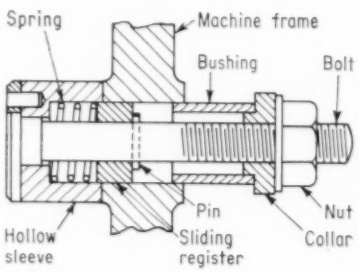
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for June, according to TEXTILE WORLD reader-judges, was:

"Tool Made From Steel Parts Removes Frozen Shaft Keys"

By Clifford T. Bower, London, England

Mr. Bower is being sent a check for $25 with the compliments of TEXTILE WORLD.



Small Tool Inserts Bushings Into Machine-Frame Bearings

When a bushing has to be inserted in a machine frame that cannot be taken to a mandrel press, a common method of pressing the bushing in is with a nut, bolt, and washers. But this practice distorts the walls of thin bushings because they tend to cock sideways.

The tool shown in the accompanying sketch inserts thin-wall bushings without distorting them. A central bolt and nut are used for forcing the bushing into its hole, and extra fittings keep the bushing axis parallel to the bore of the machine frame.

The sketch shows the bushing as it is being started into the machine frame. The collar takes the pressure off the nut. The sliding register fits closely into the bore of the frame.

The bore of the collar is a fairly close sliding fit on the central bolt. The head end of the bolt is fastened to a hollow sleeve, which has a flat face for seating on the machine frame at the back of the frame. The bolt is kept in the center of the machine bore by the sliding register.

The register is forced into the frame by a light compression spring. A small cross pin in the bolt keeps the register from sliding too far along the bolt.

In use, the bolt is inserted through the machine frame from back to front. The bushing is slipped on the bolt and aligned with the bore in the frame. The sliding register keeps the tool in alignment with the bore.

The collar is placed in and at the end of the bushing. Then the washer and nut are put on the bolt. As the nut is turned clockwise, the bushing is pressed truly into the machine frame. As the bushing is pushed in, the spring is compressed and the sliding register is pushed out of the bore.

When the collar butts against the machine frame, the bushing is fully inserted and its end is flush with the face of the machine frame. (K-3813) *Clifford T. Bower, London, England*

Make Needle Holders From Single-End Spools

Saw radial cuts the width of your knitting needles in the top of single-end spools to make handy needle holders. The job can be done in a few minutes.

Slip the needles from the box into the slots in the spools. Place the butts of the needles either to the outside of the spool or to the inside of the spool, according to how you grasp the needle when you put it in the machine.

When new needles are required, you don't have to fumble around in the box for them. (K-3483)

RHONITE R-1

Makes fabrics fit for a Queen

This strikingly lovely beauty—Marilyn Van Derbur, Miss America 1958—models an Everglaze* wash-and-wear cotton from her official wardrobe. "Everglaze" fashion fabrics were developed by Joseph Bancroft & Sons Co., of Wilmington, Delaware. Because they are treated with RHONITE R-1, they require little or no ironing and keep their fresh, new look through washing after washing.

RHONITE R-1, a modified urea formaldehyde resin, is a monomeric product of such tiny molecular size that it penetrates and reacts inside the fibers of cottons, rayons and blends, providing life-long wrinkle resistance . . . dimensional stability . . . permanent surface effects. And all this without loss of desired handle.

More and more of your customers are buying easy-care, high-fashion "Everglaze" fabrics. Isn't it high time *you* found out about RHONITE R-1 for *your* "Everglaze" fabrics?

*Everglaze is a trade-mark signifying fabric processed and tested according to processes and standards controlled and prescribed by Joseph Bancroft & Sons Co.

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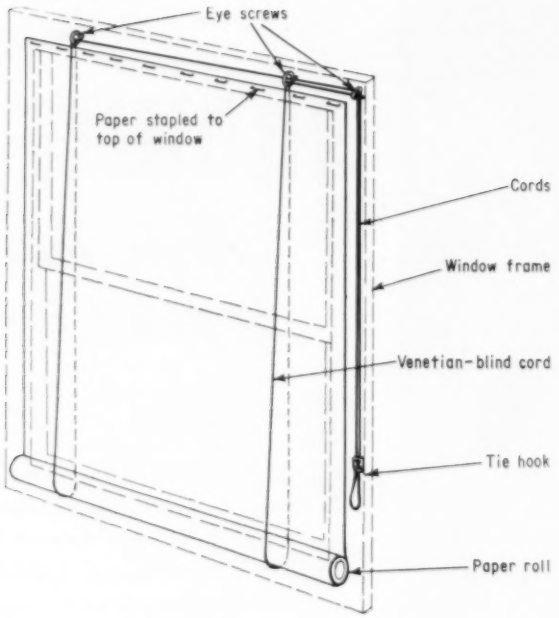


Renewable Window Shade Is Made from Stock Parts

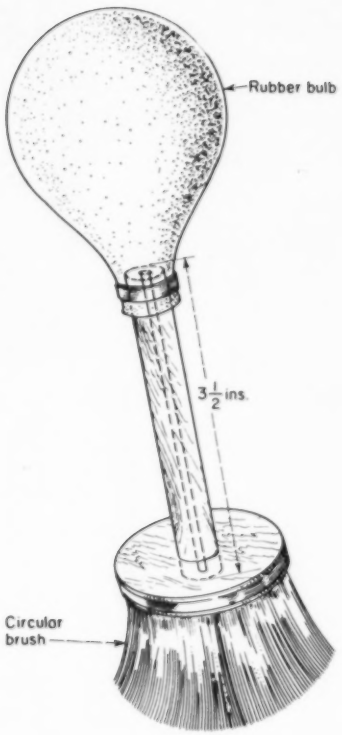
It's often necessary to have window shades in various production departments at our mill, and standard shades will not fit. We make a simple and inexpensive shade from a few odds and ends in stock that's satisfactory.

To make the shade, cut a sheet of heavy kraft paper the width of the window and 3 ins. longer than the window. Staple or glue this paper to a paper tube 3 ins. in diameter; for this tube, use a discarded cloth-roll tube. Then roll the paper around the tube.

Install three eye screws at the top of the window as shown in the accompanying sketch. To two of these screws, attach one end of a piece of Venetian-blind cord and let the other end hang loose.

Staple the loose end of the paper roll to the top of the window. Bring the loose end of each Venetian-blind cord through its respective eye screw; then run both cords along the top of the window through the third eye screw and down the side of a window to a tie hook.

The shade automatically rolls itself up as the cords are drawn and unrolls as they are released. To renew the shade, just replace the sheet of kraft paper. (K-3759) *A. Taraborelli, Providence, R. I.*



How to Remove Lint From Delicate Parts

A useful device to remove lint from delicate textile machinery where a strong blast from the mill's pipe line may do damage can be easily made from a circular brush and a rubber bulb. The device is particularly useful in cleaning fine-gauge needles on knitting machines.

Use a 2½-in.-dia. pressure rubber bulb and fit it over a hollow wooden handle, which should be 3½ ins. long and ½ in. wide. Drill the bottom of the circular brush to the same diameter as the handle, and force the handle in the brush. (K-3674)

Reduce Cleaning Time on Quill Winders

Lots of time and trouble can be saved by cutting strips of heavy cardboard from old packing cases and placing them in the drip pans of quill winders.

Cut the pieces to the exact shape of the drip pans, and replace the pieces when they become saturated with oil.

In addition to catching excess oil and grease that drops from each unit, cops or quills that fall can be easily retrieved and put back into use more quickly. (K-3847) *Joseph A. M. Sewesky, Berwick, Pa.*

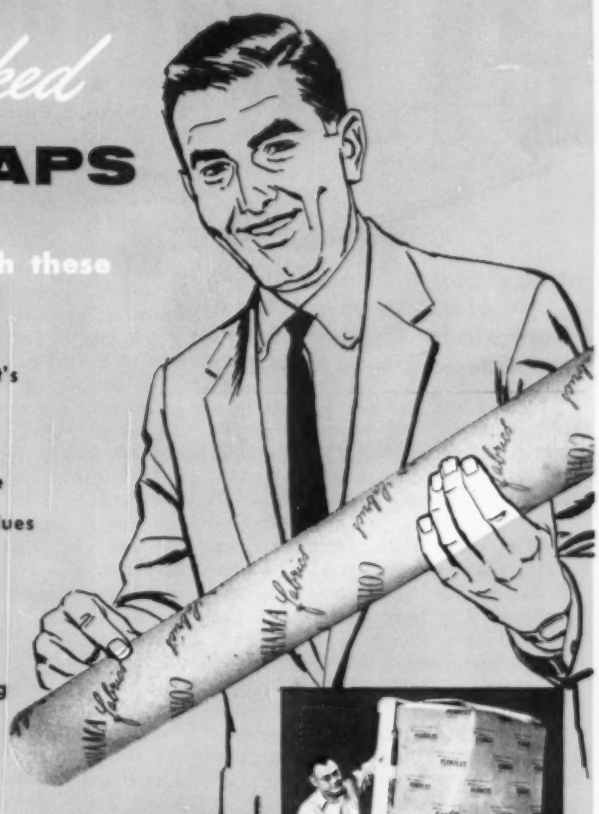
Reinforced Floor Brush Does Double Duty

We had the maintenance department make a heavy sheet-metal cover for our floor brushes. The cover keeps dust from flying; and if the edges are sharpened, the cover can be used as a scraper in very dirty areas. (K-3850)

THILCO *Trademarked* TEXTILE WRAPS

combine positive protection with these important sales advantages:—

- **Provide Brand Name identity through product's entire distribution sequence**
  - **Help trade-up product's quality**
- **Add colorful eye and buy appeal to package**
  - **Increase prestige and glamorization values**
- **Stimulate repeat orders and profits**
  - **Reduce labeling and packaging costs**
- **Simplify inventory and stock control**
  - **Provide low cost "traveling" advertising**
- **Eliminate "look-alike" product competition**



Trademark and advertising two color decorated Waxsorb cone wrap for Bemis thread.

Trademark decorated non-staining Thilco-Tuf — a heavy-duty duplex wrap for carpets, upholstery and bulk fabric shipments.

Whisper-weight wax or poly-treated cone wraps and tissues that prevent oil evaporation and seep through—Feather-weight wraps for general fabric protection—or, heavy-duty kraft paper specialties that provide transport and storage protection at its best are yours with Thilco Textile Wraps.

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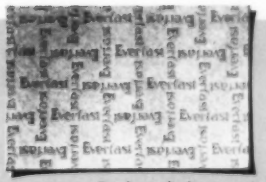
GET THIS FREE SAMPLE KIT
Contains trademark decorated samples of all popular paper grades in the Thilco Textile wrap line. Write today!



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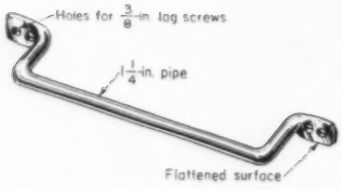


Handgrip for Overhead Belts Helps Replace Belts Safely

One of the accident hazards in a mill is putting belts on overhead pulleys while the line shaft is running; the hazard is particularly great when several pulleys are grouped together.

This hazard can be eliminated by putting up a 1¼-in. piece of black water pipe for a handgrip. The pipe is cut to the over-all length of the pulleys. It is bent as shown in the accompanying sketch. Then the ends are flattened and drilled for two ⅜-in. lag screws.

The handgrip is screwed near the pulleys and is held firmly by an employee as he replaces belts that have run off the pulleys or have been repaired. (K-3292)

Here's an Easy Way To Rebuild Rotor Cages

When electric motors are rebuilt, removing the fibre from the rotor cage is usually a hard job; but a special tool and method make the job easy.

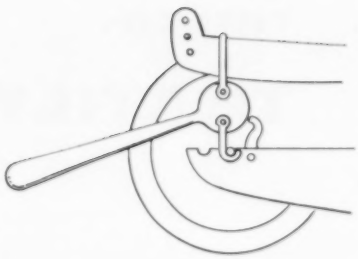
Make the tool from a hacksaw blade by bolting a small slotted piece of square steel stock through the hole at one end of the blade. Fasten the steel at a right angle to the blade.

To remove the fibre strips, first apply varnish thinner to the fibre with a small paint brush and let the rotor cage set awhile.

Drive the hacksaw-blade tool lengthwise into the fibre the full length of the fibre. Then tap the handle of the tool with a hammer so that the fibre is removed from the rotor cage; it will come out easily.

After all fibre stips have been removed, apply the varnish thinner to all the vacant slots. Clean the slots with a small round wire brush in a portable electric drill.

After the rotor cage has been wiped dry, it is clean and you can put in new fibre strips. (K-3968) *W. E. Warner, Essex, England*



Lifting Tool for Yarn Beams Shifts Them Easily at Looms

When new loom beams are tied in or when break-outs are repaired, it is often necessary to turn the beam and pull off a length of yarn.

The easiest way to turn the beam is to loosen the yarn-beam-bearing cap and disengage the gears by moving the beam journal backward on the bearing stand.

A lifting tool can be made that uses lever action to shift the beam. One hook of the tool fits the beam journal, and another hook fits the drag-roll bracket. The lever action of the tools lets a woman shift a full beam with one hand. (K-3858) *A. D Forrester, Woodruff, S. C.*

$500 for Best Kink in 1958 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any Idea that will

- Cut costs
- Improve quality
- Reduce work
- Increase production
- Make work easier

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1958.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 300 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
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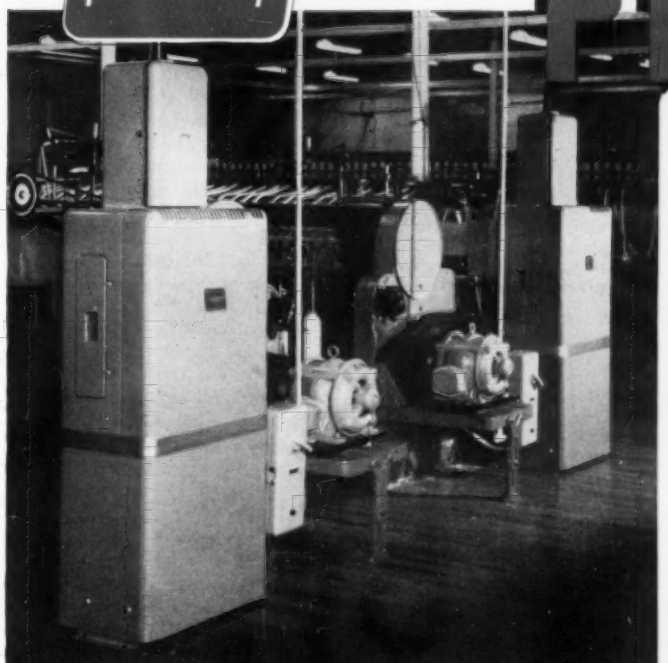
PNEUMASTOP®

RETURNS MORE PROFITS



MILLS now enjoying the many competitive advantages of PNEUMASTOP can look forward to an even greater return from their investment with the addition of new ELECTROFIL. ELECTROFIL patrols the creel portion of the roving frame ready to stop instantly when a creel break occurs, leaving a tail for piecing-up. Mills report frame down time cut in half!

HUMIDITY — WHERE IT'S NEEDED

PNEUMASTOP literally pulls humidified air into the drafting area. Quality is vastly improved because of fewer ends down, frame stops, and lap ups.

CLEANER FRAMES

PNEUMASTOP's suction works in fly generating area, picking up loose fly and trash before it settles on frames. Flyer picking time is cut in half!

CLEANER — STRONGER ROVING

Slubs, gouts, and foreign matter are removed and the roving goes to the spinning room cleaner, stronger, more even. Spinning room ends down are reduced as much as 30%!

INSTANTLY CONTROLS END BREAKS

PNEUMASTOP immediately grabs the broken end, keeping it always under control. The frame is instantly stopped except for slight delay at traverse change.

for more information please contact

PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA

☑ FROM ROVING

- Production increased from 3 to 15%
- Job assignment increased 25%
- Roving area kept 50% cleaner
- Frame down time due to end breaks and creel breaks reduced 50%

☑ FROM SPINNING

- Reduction of ends down from 10 to 30%
- Yarn appearance up-graded ½ grade
- Spinners' cleaning time reduced another 15%
- Production increased on each frame

☑ FROM WINDING

- Throw-outs reduced 5 to 15%
- Cleaning cycle on frames reduced 20 to 25%
- More full spinning bobbins, resulting in 2% increase in production
- Knots reduced per cone

☑ FROM WEAVING

- Warp end breaks reduced 10 to 15%
- Filling breaks reduced 10 to 15%
- Loom stops from yarn imperfections reduced
- Weave room efficiency improved ¼ to 1%

☑ FROM THE PRODUCTS

- Fewer cloth imperfections due to yarn faults
- Faster inspection per cut

☑ These are actual results of a study made recently in a well known mill. Full particulars furnished upon request.

PNEUMAFIL®

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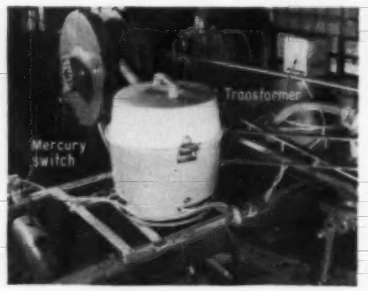
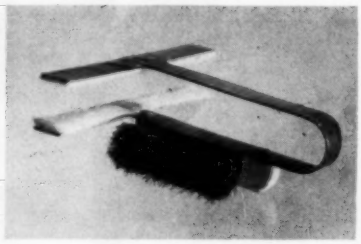


Household Vacuum Cleaner Rides Spooler Traveler

The accumulation of lint and thread on the brushes of our Barber-Colman Type C spooler formerly was so great that the waste frequently was blown loose and got into the work. The brushes were cleaned during the normal cleaning period, but this cleaning was not frequent enough to do the job satisfactorily.

We solved this problem by mounting a household vacuum cleaner on the spooler traveler to clean the brush lap preventers. When the traveler stops the winding cycle, the vacuum cleaner is turned off by a mercury switch that is tilted open by the counter-trip post. The 220-v. current is reduced to 110 v. by a small transformer that also is mounted on the traveler.

The number of loom stops in our mill was materially reduced because of less wild yarn and loose sized lint on the warp threads. (K-3910) *L. C. Martin and T. R. McBride, Brenham Cotton Mill, Inc., Brenham, Tex.*



Combination Tool Cuts Comber-Cleaning Time 50%

We have built a combination cleaning tool for our combers that has cut cleaning time 50%. Cleaning is better, pricked fingers have been eliminated, and walking has been reduced by half.

Here's how to make the tool:

Materials required are one $\frac{7}{8}$x28-in. steel heddle bar, one cap-bar brush, a $\frac{7}{8}$x14-in. strip of flannel, and two small nuts and bolts.

The strip of steel is cut into three pieces: two are 7 ins. long and one is 13 ins. long. The 13-in. strip is bent as shown in the photograph, and the two shorter pieces are welded to the arms. The cross pieces are lined with flannel and adjusted so that they are about $1\frac{1}{2}$ ins. apart.

The handle of the cap-bar brush is shortened so that the over-all length of the brush is about 4 ins. Bristles cover $3\frac{1}{4}$ ins. of the brush.

Two holes are drilled through the side of the brush and one arm of the V-shaped piece of steel so that the brush can be bolted to the arm with the bristles parallel to the ground.

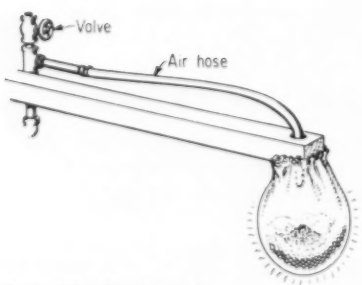
Here's how to use the tool:

The tool is held in the operator's right hand while he flips open the detaching-roll clearer with the other hand and raises the comb.

Pressure is applied by the thumb to the top of the U as the operator grasps the comb between the flannel-covered jaws and strips downward on one half of the comb. The motion is repeated on the other end of the comb. The 7-in. strokes overlap in the middle of the comb; so no precision for positioning the jaws is needed.

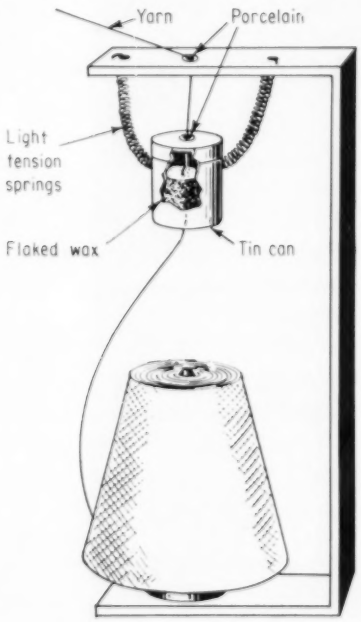
After the comb receives its second stroke, the brush is in position for a quick stroke along the upturned edge of the clearer. The bristles lying parallel to the clearer clean more efficiently than bristles dragged perpendicularly across the surface.

Any tufts of fiber remaining in the comb teeth after cleaning can be disregarded until the next run. Running will not dislodge any tufts that the brushing fails to remove. (K-3958) *Standards Dept., Dominion Textile Co. Ltd., Montmorency Falls, Que.*



Dry Cloth Samples With Compressed Air

Dyed samples can be dried quickly without overdrying if they are placed in a mesh bag connected to the mill's compressed-air supply. The samples should be extracted before they are put in the bag, which is preferably made of a porous nylon fabric. (K-3951)



How To Wax Yarns On the Knitting Machine

Many yarns that are waxed on high-speed winders don't get waxed thoroughly. Some yarns are not waxed at all. Here's a way you can wax yarn on the knitting machine:

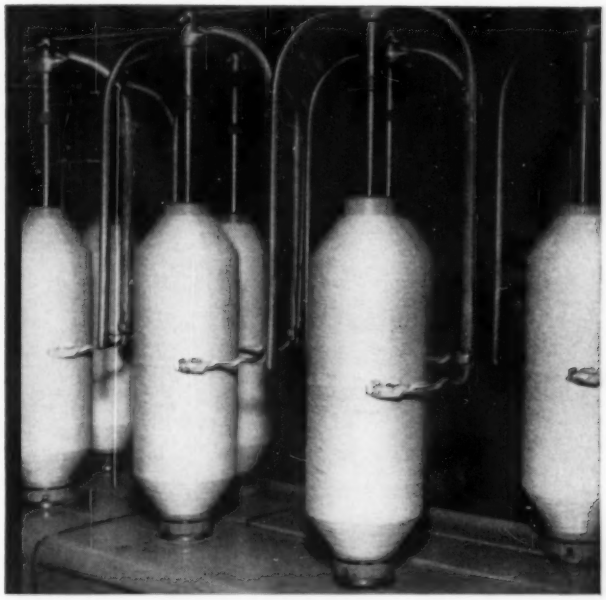
Drill a hole in the bottom of a small tin can, and drill a similar hole in the lid of the can. Press a porcelain into both holes. Suspend the can on the yarn rack immediately over the yarn cone. If you use two light springs for the suspension members, the action of the yarn and the machine will vibrate the can and agitate the wax.

Shred the wax in a vegetable shredder, and fill the can with the shredded wax. Thread the yarn through the can with a latch needle.

Waxing will reduce lint and holes in the fabric and make difficult yarns easier to run. (K-3571)

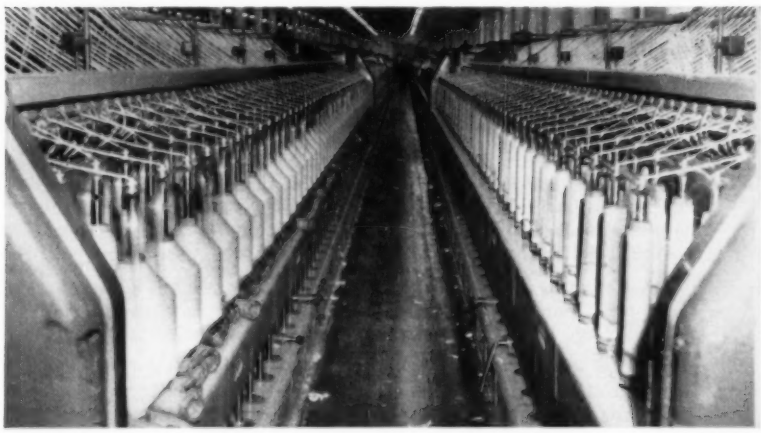
Get more ROVING on all sizes of bobbins

by J. L. C.



New Arro Flyers with High Tension Pressers increase weight 25-40% with no deterioration in quality

We believe this combination gives more roving on bobbins than any other system in the world. The evenness obtained equals or betters production with usual flyers. Weight is increased without increasing the twists per inch or the number of turns around the presser arm.



These frames are producing .60 hank from 70 grain sliver at a spindle speed of 735. Ends down average less than 2 per hank.

In a test recently run in the South on a 10 x 5 slubber with 2.50 hank roving, 1-7/16" combed cotton with a .90 twist multiplier and a spindle speed of 1004 r.p.m., the weight was increased from the normal 28 ozs. net to 39 ozs.—an increase of about 40%.

"Arro" Flyers can of course be put on any frame: for ultimate efficiency we recommend the Platt MS.2 Roving Frame. These streamlined frames produce an even non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames, we invite you to write for more information on those made by the *world's largest manufacturer of textile machinery*.

Slubbing bobbins 12" x 6½" dia. containing approx. 64 ozs. of roving, 1.0 hank, can be easily produced from good American cotton.

New "Arro" Flyer has a finish considerably better than previously obtainable. Even the inside of the hollow leg is completely finished. Mill tests have shown that fibre accumulation is reduced at least 25%. Another important feature is that the threading slot is in the leading side of the hollow leg so air enters the slot and prevents escape of loose fibre.

Even if you don't wish to invest in new frames to get heavier packages, consider the proven "Arro" Flyers for your present frames. Over 3,000 are running in the south. Call Gene Bozeman at Charlotte, (FR 5-1640), Harvey Clinch at Greenville, (GR 9-6257), or the writer at Framingham, Mass., (TR 3-7496). Any one of these numbers will give you more information about cost, etc.

ATKINSON, HASERICK & CO.
INC.
FRAMINGHAM, MASS.
336 Ridgewood Ave., Charlotte, N.C.
Greenville, S.C.
Philadelphia, Pa.

PLATT BROS.
(SALES) LTD.
OLDHAM, ENGLAND
Marketing the textile machinery made in the works of Platt Bros. & Co. Ltd., Howard & Bullough Ltd., Dobson & Barlow Ltd.

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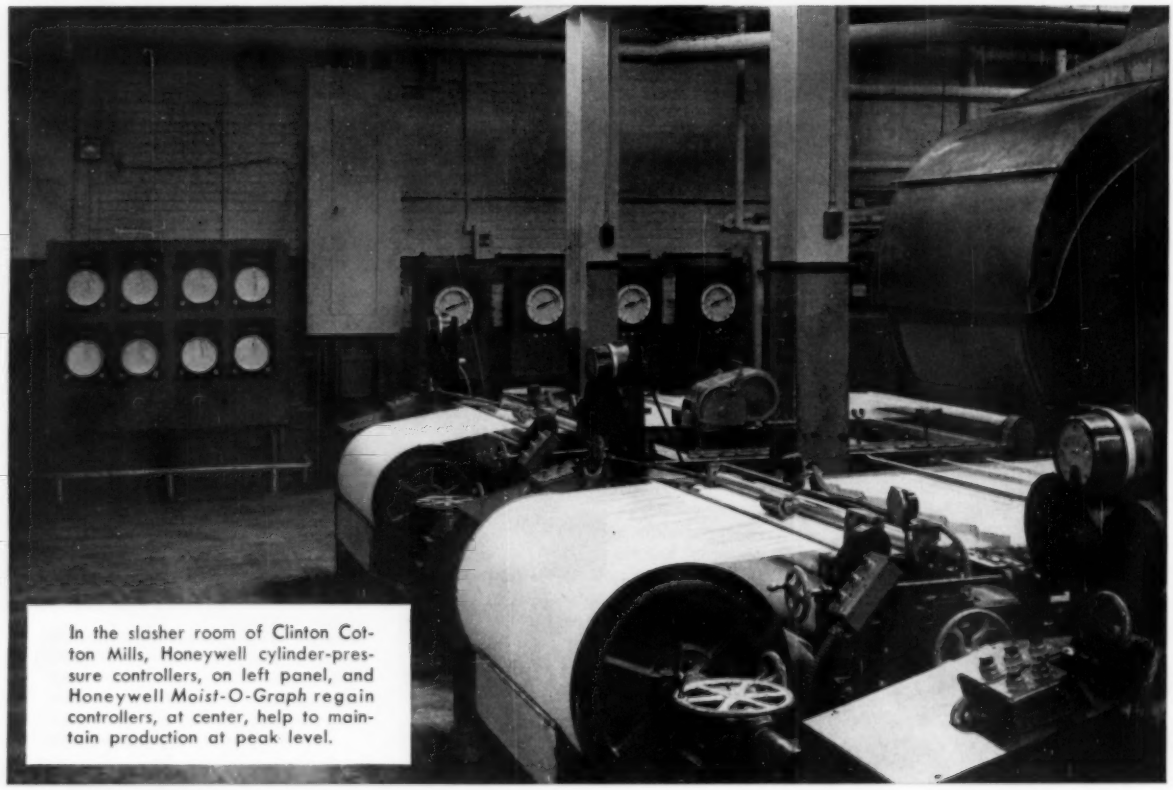


In the slasher room of Clinton Cotton Mills, Honeywell cylinder-pressure controllers, on left panel, and Honeywell *Moist-O-Graph* regain controllers, at center, help to maintain production at peak level.

Slasher speed increased 25%

by modernization program at Clinton Cotton Mills

Honeywell Instrumentation at Clinton Cotton Mills

Two pressure controllers for cylinders on each of four slashers

One *Moist-O-Graph* regain controller for each slasher

One size box temperature controller for each slasher

Size storage kettle temperature controls

Dual cam temperature program controller for size cooker

ElectroniK gold grid humidity control for weave room

Honeywell air conditioning control system

Wet-dry bulb dew point controls for weave and spinning room air washers

Here's an example of how a modernization program paid off. It can do the same for you.

A complete updating, from opening room to cloth room, has increased production markedly at Clinton Cotton Mills, Clinton, S.C. An important part of this increase in efficiency was the installation of Honeywell instruments for control of temperature, pressure and humidity in the slasher, weave and spin rooms.

Throughout the mill, processes have been streamlined, old equipment has been replaced or modernized and new production methods have been initiated . . . with instrumentation an important part of the entire program.

Typical of the improvements in mill efficiency is the 25% increase in the speed of four slashers—achieved through addition of new drives, front ends, size boxes . . . and accurate Honeywell controls.

When you're ready to bring your own mill up to date, call on Honeywell at the planning stage for valuable help. A Honeywell field engineer is as near as your phone. MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

First in Control

Do you need help on a technical problem? TEXTILE WORLD is at your service in helping solve problems in yarn manufacturing, weaving, knitting, dyeing, finishing, and other textile operations. A large staff of mill men, consultants, and other experts are available for authoritative answers. Send your problem to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Cotton Waste Standards Are Based on Stock Fed

Do you have any figures on standards of waste on various spinning processes of combed and carded yarns from Middling cotton? Are the standards based on the weight of cotton fed or the product obtained? (1382)

The percentages of waste given in the table shown below are fairly typical of medium yarn numbers spun from Middling cotton. The percentages are based on the actual weight of stock fed.

The actual total loss per 100 lbs. fed to the openers is 24.6%. The loss obtained by multiplying the total waste percentage loss by 100 gives a total of 26.09 lbs. Waste losses figured on stock fed to each process and added together give a more-precise actual waste loss.

Waste standards (Middling cotton)

Process	Stock fed (lbs.)	Waste (%)	Waste removed (lbs.)	Net weight to next process (lbs.)
Opening and picking	100	3.26	3.26	96.74
Carding	96.74	5.68	5.50	91.24
Drawing and roving	91.24	0.50	0.46	90.78
Combing	90.78	16.00	14.52	76.26
Spinning	76.26	1.25	0.95	75.31
Total		26.69	24.69	

WASTE STANDARDS are based on the actual weight of stock fed. These figures are fairly typical of medium yarn numbers spun from Middling cotton.

Modify Sinkers for Better Knitted Fabrics

Technical Editor:

We are troubled with holes in our knitted fabric that seem to be caused by slubs and thick places in the yarn. Do you have any suggestions? (1387)

You can rewind the yarn to remove the slubs and thick places. An application of wax will help to soften and lubricate the knots and slubs and help them to knit better.

One mill found that slubs caused trouble after the sinkers had been modified to make better fabrics. The sinker nibs were cut deeper to make a narrower throat to give better control to the loops as they are formed.

The narrower throats didn't allow heavy slubs to pass through; so the sinker nibs were champered on the underside so they could still control the loops and yet allow slubs to pass through better.

Plastics Are Now Used On Cotton Pick Sacks

Technical Editor:

What products are being applied to cotton pick sacks to improve wear? (1391)

Bags used for picking cotton in the U. S. are reinforced with either an asphalt compound or plastics based on polyvinyl chloride. Asphalt or tars are often transferred to the cotton and make trouble in the finished goods.

Polyvinyl-chloride plastics are sometimes printed on the bagging in a polka-dot pattern that provides adequate wearing surface at relatively low cost. They do not stain the cotton.

Balance Spinning Production With Spooling and Winding

Technical Editor:

What is the best method of keeping spinning production in balance with spooling and winding capacity? (1397)

The length of yarn in yards per bobbin from the spinning frame and the winding or unwinding speed of the spooler or winder in yards per minute are the important factors. The yards on the bobbin divided by the unwinding speed gives the number of minutes to unwind each bobbin.

The circumference of the drum in yards multiplied by the speed of the drum gives the winding speed in yards per minute. The yards per bobbin is obtained by weighing about 12 bobbins from various doffs of the same yarn number.

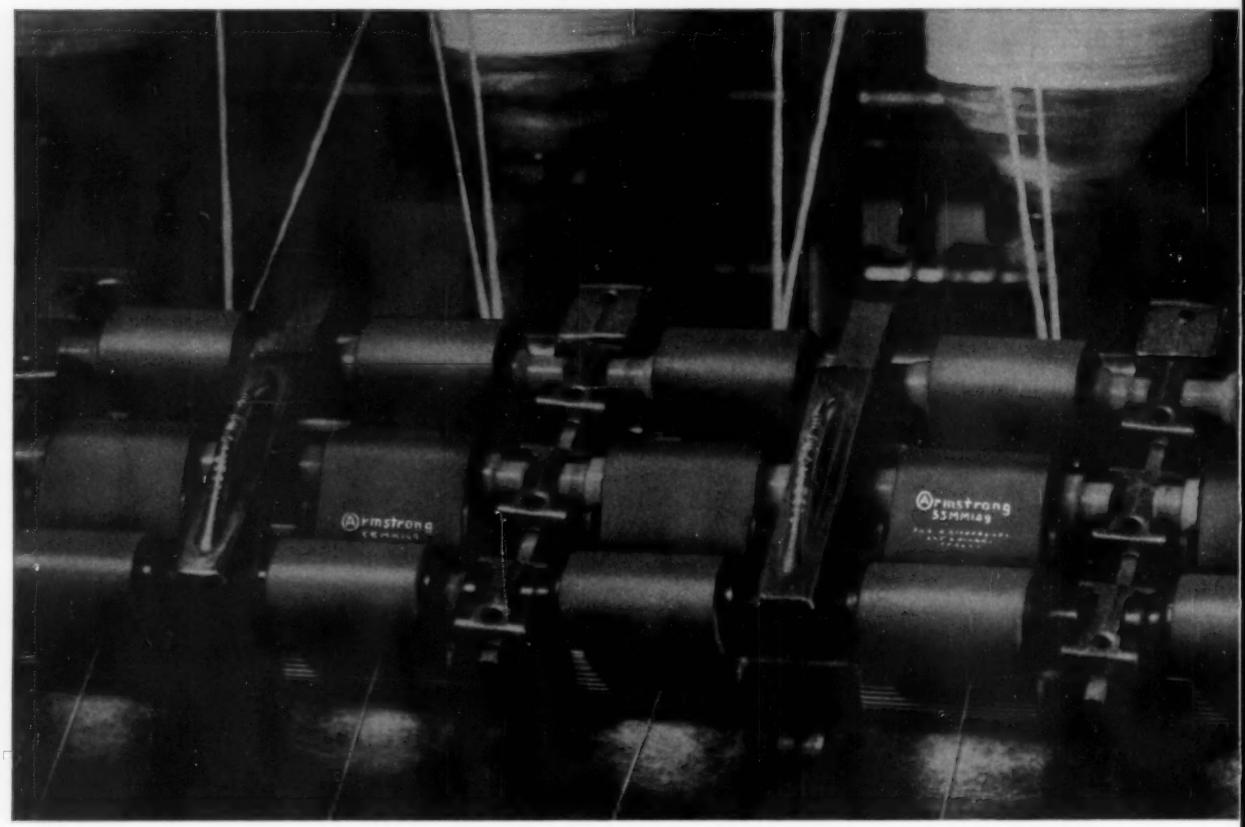
Deduct the weight of the empty bobbins and divide the total net weight by the number of bobbins weighed for the average net weight of one full bobbin. Multiply this weight in ounces by 52.5 and the yarn number. The product equals the number of yards per bobbin.

For example, suppose a bobbin with 6 oz. of 24s yarn sizes at 24.06. The yards on the bobbin $= 6 \times 52.5 \times 24.06$
$= 7{,}579$ yds.

With a drum speed of 1,080 yds. per min., this bobbin unwinds in $7{,}579 \div 1{,}080 = 7.01$ mins.

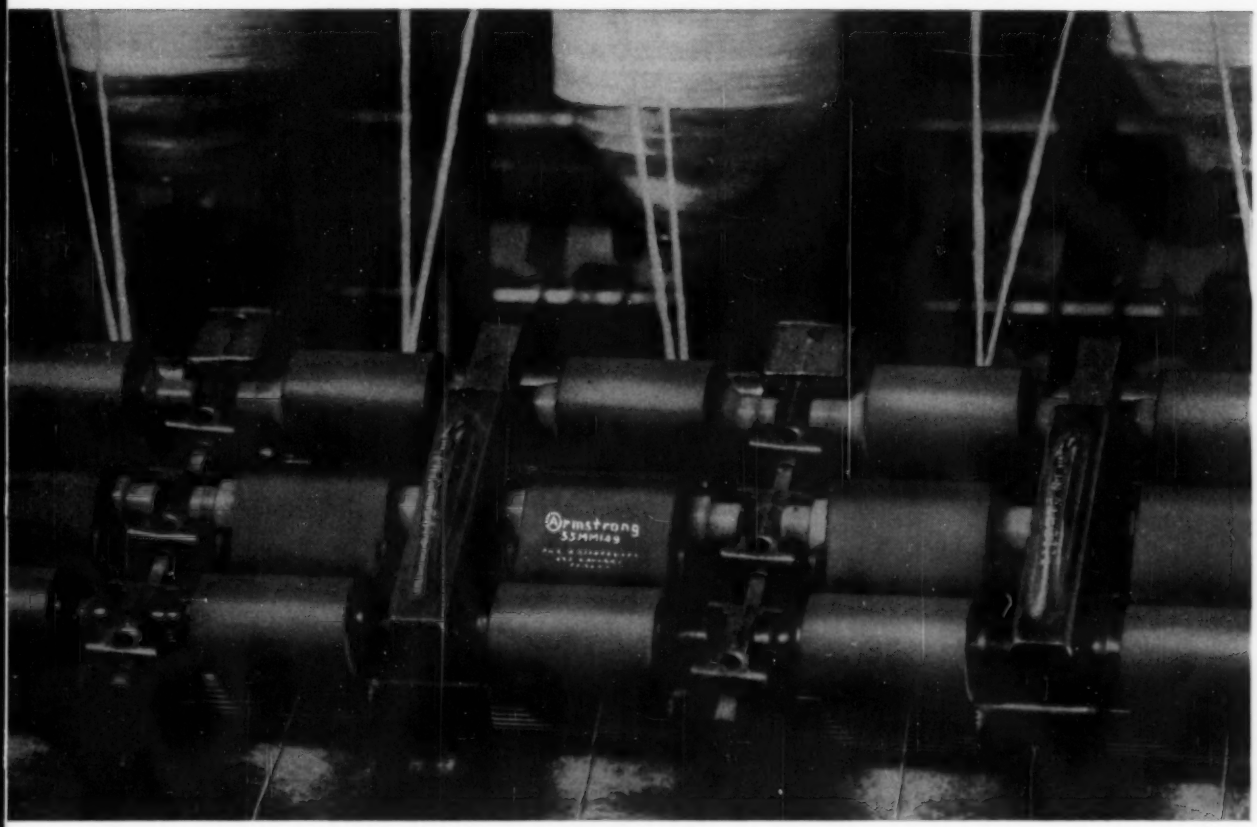
The best operating economy calls for putting as many yards as possible on the spinning bobbin. Increased yardage means less downtime and labor for doffing and fewer bobbins handled by the winder operator. Drum speeds or cycle adjustments on the spooler or winder can be made to give the best results for the yardage on each spinning bobbin for every yarn number run.

This method of coordinating production does not require consideration of doffing times, front-roll speeds, turns per inch, contraction, or layer density.



Precision-made Armstrong get high production of

Constant control of the fibers results in fewer irregularities and greater yarn strength . . . helps you keep production at peak quality.



Accotex Aprons help you strong, uniform yarn

The right spinning apron can make an important difference in helping you get top-quality production from modern high-draft frames. That's why hundreds of mills have standardized on Armstrong Accotex Aprons.

Like the equipment they run on, these aprons are precision-made to give you superior yarn control and smooth drafting action. As a result, Accotex Aprons fit snugly and run smoothly, shift after shift, for years.

A big reason for this performance is that each Accotex Apron ordered for a specific frame is identical in every respect . . . in size, frictional qualities, flexibility, and abrasion resistance.

The special rubber compounds used in Accotex Aprons are precision-made, too. The different compounds used on the inner and outer surfaces are specially tailored for the job each must do.

Advanced production methods and skillful rubber compounding . . . combined with careful inspection . . . all help produce a top-quality apron that will help you get the best performance from your high-draft frames.

If you're not already using Accotex Aprons, ask your Armstrong man to arrange for a test next time he calls. Or write Armstrong Cork Company, Industrial Division, 6408 Dauphin Street, Lancaster Pennsylvania.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

For more data, write this page number on Reader-Service card. →

For QUALITY on the high seas it's the United States...

in colored yarns it's Franklin-Dyed

Uniformity is a hallmark of "Franklin Dyed" quality. We dye yarns exclusively on the Franklin compressible spring. This permits uniform density of packages, which promotes uniform penetration of the dye liquor. Uniform penetration yields uniform shades. And uniform shades put your end products in the quality class.

SPECIALIZATION

Yarn dyeing is our specialty. We don't dye to make yarn sales. Our 5 plants and our entire organization have but one objective — to provide the best yarn dyeing service available.

CAPACITY

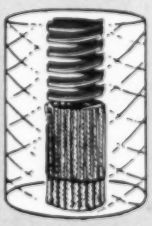
With 5 dye plants, hundreds of package dyeing machines in dozens of sizes and winding equipment to match, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity.

CONSULTATION

We can help you with your color problems. We have unequalled experience in time, variety and volume — all at your service.

AVAILABILITY

Our 5 yarn dyeing plants, strategically located in 5 different textile centers, are conveniently yours. Contact our nearest plant or office.



X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

Franklin Process

A DIVISION OF INDIAN HEAD MILLS

Dyers of cotton (carded, combed, mercerized) Orlon* (yarn & tow) Acrilan • Dacron** • Ban-Lon® • Helanca • Spun Nylon • Spun Rayon • Blends • Wool and Worsted yarn

Providence • Philadelphia • Greenville
Chattanooga • Fingerville, S. C.
New York Office — 111 West 40th Street

*Trademark for Dupont's acrylic fibre
**Trademark for Dupont's polyester fibre

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Dye-Resist Yarn

American Bemberg has developed a yarn that has short dye-resist spaces at irregular intervals of an average of 1.2 or 0.4 yds. When the yarns are dyed with direct dyes, the dye-resist spaces remain undyed.

The undyed spaces are resistant to washing and ironing, and they have an affinity for acetate dyes. They provide a dual dye effect if cross dyed or first dyed with direct dyes and then overdyed with acetate dyes.

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Prices of such underwear are expected to be much higher than for existing all-cotton underwear, but the new development is a possible new source for additional sales.

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The warp is combed cotton and the filling is nylon. Blue and brown tones are favored for sportswear. The fabrics are classed as wash-and-wear and have a water-repellent finish.

Mylar Draperies

Forster Textile Mills is weaving casement cloths from Mylar polyester film, which is slit into narrow widths. In one sample, transparent panels, 1 in. wide, run the full length of the material and alternate with 2-in. panels of normal threads.

Mylar is used as filling throughout the cloth. The fabric hangs well and has the feel of conventional cloth of moderate weight. Light passing through the transparent panels helps to keep a room bright and helps the panels to become a part of the fabric design.

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A lightweight thermal knitted fabric has been developed at J. E. Morgan Knitting Mills. The fabric is made on a rib machine by connecting the vertical ribs with tuck stitches. Tuck stitches are made on one set of needles, while the other set produces conventional stitches.

After scouring, the fabric is dried and napped. Fabrics so made are soft, they don't irritate the wearer, and they retain their cellular structure through repeated washings.

Strong-Rayon Tow

North American Rayon Corp. has introduced a strong-rayon tow in 100,000 den. at 43¢ per lb. The tow can be blended with other fibers. Coarser deniers are also available.

Polypropylene Yarn

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The filaments are available in single-strand sizes from 0.004 to 0.020 mm. Multifilaments are available from 0.003 to 0.008 mm. for each filament.

Cross sections can be made to any shape, and the fiber is supplied in a wide range of colors.

Tentative properties are:

Specific gravity—0.9
Melting range —325 to 335° F.
Softening point—280 to 300° F.
Tenacity —5 to 7 grams per den.
Ultimate elongation—15 to 25%
Strength —60,000 to 85,000 psi.
Shrinkage at 165° F.—4 to 8%

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James Lees & Sons Co. has introduced three mothproofed all-wool tufted fabrics for carpets. The mothproofing is permanent and is done with a chlorinated hydrocarbon called Dieldrin.

The chemical kills by contact, ingestion, and by vapor; but it has no adverse effect on any of the normal properties of wool such as hand, feel, colorfastness, water absorbency, warmth, or other characteristics.

sounds a new note in nylon with these modern yarns for carpet and upholstery

Whether you loop, crimp, coil or curl them, Caprolan heavy yarns are the progressive mill's answer to the demands of modern styling. New textures in white white yarns which may be dyed to colors of striking depth and brilliance are the keys to lasting beauty and long wear in both carpet and upholstery. The strength of these outstanding nylon filament yarns, plus their much-wanted bloom characteristics are economy advantages a textile man finds hard to overlook.

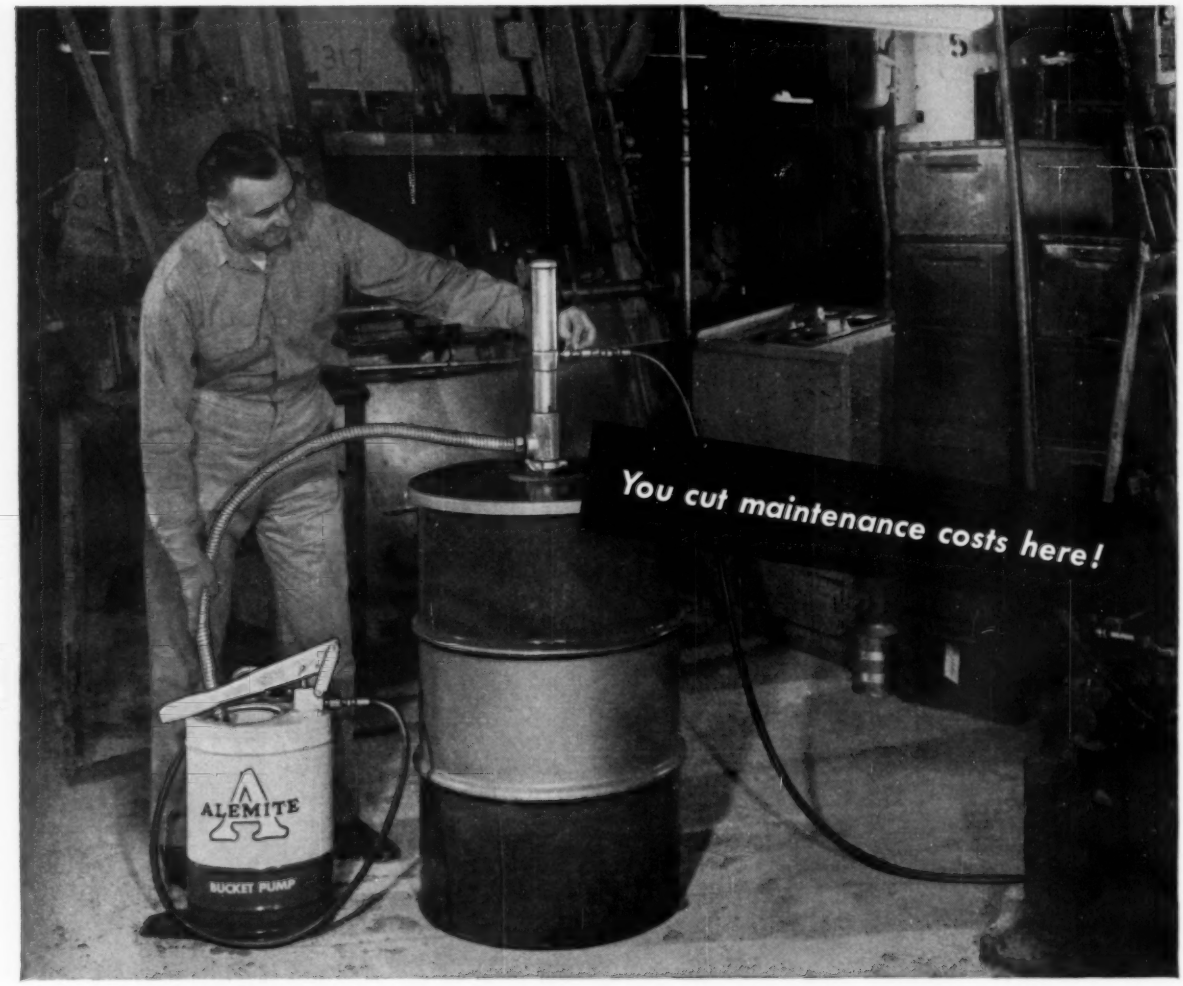
For more information, call or write us today about textured yarns of Caprolan.

Fiber Sales & Service Allied Chemical *National Aniline Division*

261 Madison Avenue, New York 16, N.Y.

*Trade Mark—Allied Chemical's Polyamide Fiber

For more data, write this page number on Reader-Service card. →



Alemite Power Transfer of Lubricants Is 63% Faster Than Hand Method!

Wherever old-fashioned hand methods are used to transfer lubricants from original drums to other containers, time and money are wasted!

This high-speed, air-powered Alemite Transfer Pump transfers 37 pounds of pressure gun grease per minute, direct from original drum to loader pump, bucket pump or power gun. This gives you 63% faster transfer than by hand! And lubricant is always sealed—fully protected against mess, waste and contamination.

Pump also handles alcohol, cutting oils, kerosene—almost any non-corrosive, non-abrasive fluid used by the drum. Synthetic rubber air piston requires no oiling. Fully adjustable delivery rate . . . weighs only 15½ pounds!

Step up to fast-moving, time-saving transfer of fluid and semi-solid materials. Check Alemite's complete line of lubrication equipment for industry.

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DIVISION
STEWART-WARNER
CORPORATION

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Alemite, Dept. X-88
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Please send me your complete catalog of Alemite industrial lubrication equipment.

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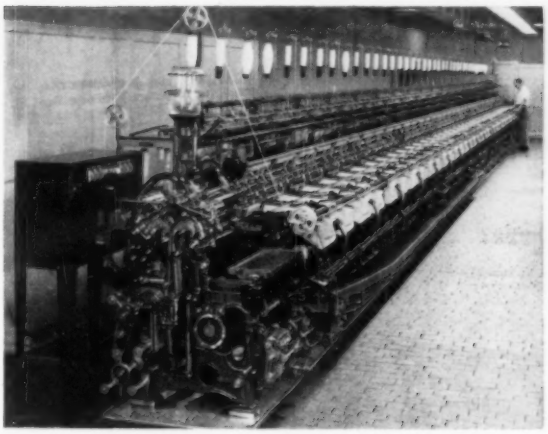
Full-Fashioned Machine



The Reading Type-60 38-section full-fashioned knitting machine announced by Textile Machine Works, Reading, Pa., has a main speed of 110 to 120 courses per minute. Splicing speed is 100 courses per minute, and production of two machines operated by one man is about 48 doz. pairs of stockings in 8 hrs.

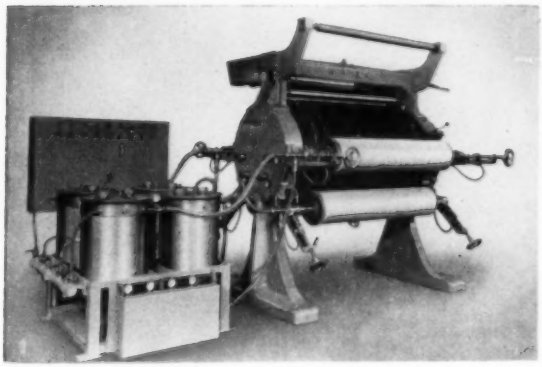
Cam motions have been redesigned for high speeds. Half-turn and welt-turning speeds are 30 to 35 courses per minute. Needle-bar and presser-shaft diameters are 1 1/8 in. to reduce shaft tension.

A presser-cam unit is installed at every frame section, with two at the center section. Cam levers are distributed uniformly for smoother machine operation. Two separate coulier motions are fitted to distribute the couliering load more easily.

Automatic welt-bar unhooking eliminates manual operations and brings the bars back to the starting position automatically. Stockings are completely drawn from the knitting field by automatic operation of the main draw-off straps. Stockings are removed from the reels and delivered to trays below the take-up arrangement.

Welt wires are inserted automatically. One or more welt wires can be placed in a magazine above the welt-bar bridges. Welt wires are drawn into operating position automatically by control fingers actuated from the main camshaft.

Circle T-1 on Reader-Service Card



Rotary-Screen Printing Machine

A rotary-screen printing machine that will print up to eight colors of 27-in. repeats, or four 72-in. repeats, has been announced by Morrison Machine Co., Paterson, N. J.

The basic principle of screen printing is retained in the machine but is converted from an intermittent to a continuous process by cylindrical screens. The screens are made of 120-mesh metal.

Color is fed to the inside of the screens automatically and is forced through the patterns by a squeegee that is mounted at the point of contact of the screen with the fabric. Doctor blades or color boxes are not used on the machine, which eliminates doctor streaks and greatly reduces contamination of one color by another during printing.

Because of the low pressures possible between screen and cylinder, the characteristic brightness of screen prints is retained in a continuous roller-type process. Pigments and soluble colors may be used in the process, which is particularly suitable for discharge prints because of the absence of doctor blades. The usual horizontal and vertical adjustments can be made.

Circle T-2 on Reader-Service Card

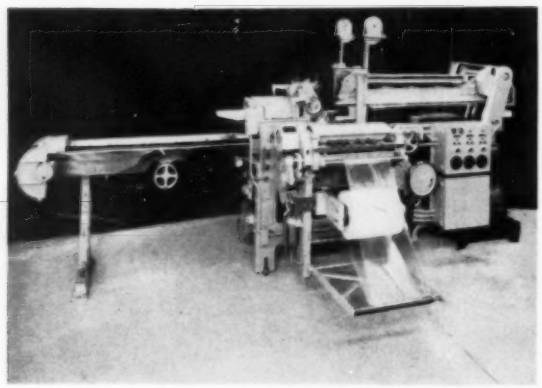
Box-Spinning Frame

A box-spinning frame for 0.3s to 2s cotton yarn has been announced by Platt Bros. (Sales) Ltd., Oldham, England. The machine, called the Platt/Josephy spinner, is used to make coarse yarns without draft that are not spinnable on ring frames. Spinning and winding are done at the same machine.

The supply packages are individual roving cheeses that are placed in metal boxes attached to the frame below the winding spindles. Roving is pulled from the center of the cheese through the plastic eye of a hinged lever around a guide bar to an adjustable tension finger, to the traversing guide finger, and then to the winding spindle.

Box speed is 600 to 1,800 rpm., and twist range is 1 to 6 tpi. Frames are available with 50 to 100 spindles in increments of 10. Dimensions of the standards box are 3 1/8 x 10 1/4 ins.; a 4 3/32 x 11 3/32 in. box is available.

Circle T-3 on Reader-Service Card



Versatile Packaging Machine

A wrapping machine that will heat-seal polyethylene and other soft plastic fibers at speeds of up to 75 packages per minute has been developed by Battle Creek Packaging Machines, Inc., Battle Creek, Mich.

The Model 475 machine will overwrap packages within the following range: 4¾ to 12½ ins. long, 3 to 8 ins. wide, and ½ to 4½ ins. high. Specially ordered machines will handle packages 5 to 9 ins. wide.

The machine can handle cellophane, waxed paper, laminated foils, polyethylene of all densities, Mylar, cellulose acetate, polymer-coated cellophane, Vitafilm, Pliofilm, and other packaging materials.

Special film-carrying apparatus and continuous-flow heat-sealing pads make it possible to handle the wide variety of packaging materials.

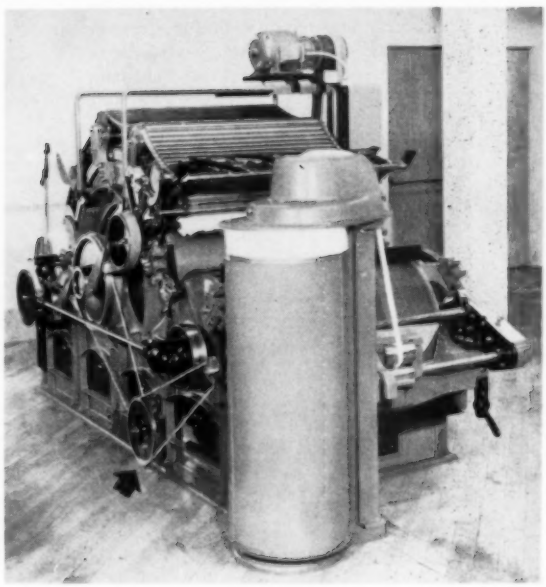
Circle T-4 on Reader-Service Card

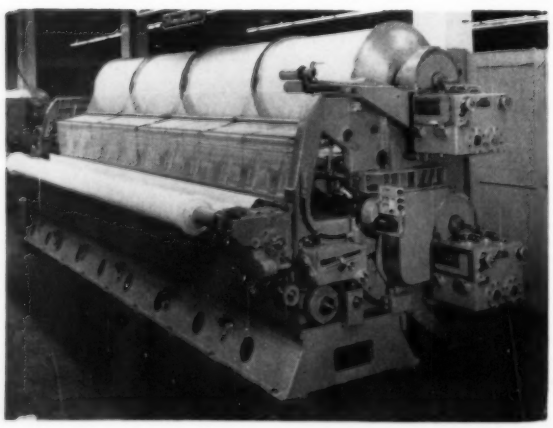
Antifriction Card Pulley

An antifriction binder pulley for cards (arrow in the photograph) that replaces a plain bearing has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. This subassembly consists of a standard adapter-type ball bearing, stand, and stud.

The antifriction bearing is said to last many times longer than the bronze replacement bushing. It also results in savings in labor and lubrication cost. The only maintenance necessary is applying grease every six months. The new bearing completely eliminates oil seepage.

Circle T-5 on Reader-Service Card





Tricot Machine

The Reading high-speed tricot machine built by Textile Machine Works, Reading, Pa., has been redesigned to accommodate 30-in. warps. The capacity of the let-off attachments has been increased to accommodate the large warps.

A gear-type fabric take-up is provided with a quick-change selector, and the cloth take-up roll has been lowered for the convenience of the operator. A selvage-control attachment has been added to the machine.

Circle T-6 on Reader-Service Card

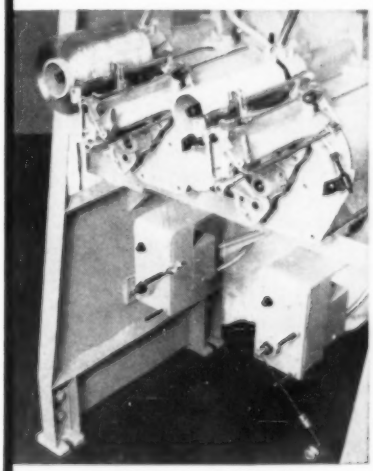
FOSTER TAKEUP WINDERS

For Melt-Spun, Wet-Spun and Dry-Spun Synthetic Fibre Yarns

Model 403
for Melt-Spun Yarns

Long Experience in the Field

We have had long experience in the design and manufacture of takeup winders for melt-spun, wet-spun and dry-spun synthetic fibre yarns. We have made and are now making machines of this type for leading producers of synthetic fibres. We illustrate herewith the two types of machines and describe briefly how they operate.



Tensiomatic Winder
for Wet-Spun and Dry-Spun Yarns

MODEL 403

For continuous winding of synthetic melt-spun yarns direct from spinneret at speeds up to 6000 ft. per minute. Yarn (15 to 1200 drawn denier) travels from spinneret down through heated chimney over finish rolls, with ceramic guides under each to maintain proper arc of contact, to a series of Godet feed rolls, delivering the yarn to a reciprocating traverse guide (actuated by independently driven traverse cam) and to the package core, which is driven by a chrome plated steel roll. Pressure of package on roll automatically adjusted as its weight increases. One 5¼" traverse package, two 3¼" traverse packages, or four 1" traverse packages per holder. Drive roll shaft and feed rolls driven by separate synchronous motors. Ribbon wind is eliminated. 16" gauge, 56 spindles with 2 independent drives (28 spindles each).

TENSIOMATIC WINDER

For continuous winding of wet-spun or dry-spun synthetic yarns direct from spinneret to 6" traverse packages (1 or 2 packages per position) or to 10" traverse packages weighing up to 30 lbs. Speeds up to 450 feet per minute. Precise wind machine. As package builds up and yarn speed increases, speed of motor is automatically and proportionately decreased by means of dancer rolls and an electronic control device.

Our Engineers Will Work With You

If you are developing a new synthetic fibre, it will pay you to consult our engineers regarding your winding requirements. They are familiar with your problems and can custom design a machine to your requirements.

FOSTER MACHINE COMPANY

A Yarn Winder for Every Purpose

Westfield, Massachusetts, U.S.A.

Southern Office — Johnston Bldg., Charlotte, N. C. • *Canadian Representative* — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ontario
European Representative — Muschamp Textile Machinery Ltd., Keb Lane Bardsley, Oldham, Eng.

293-8

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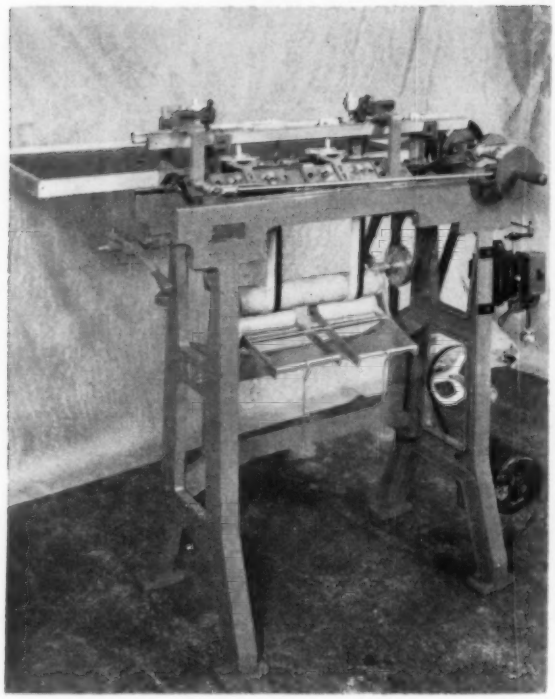


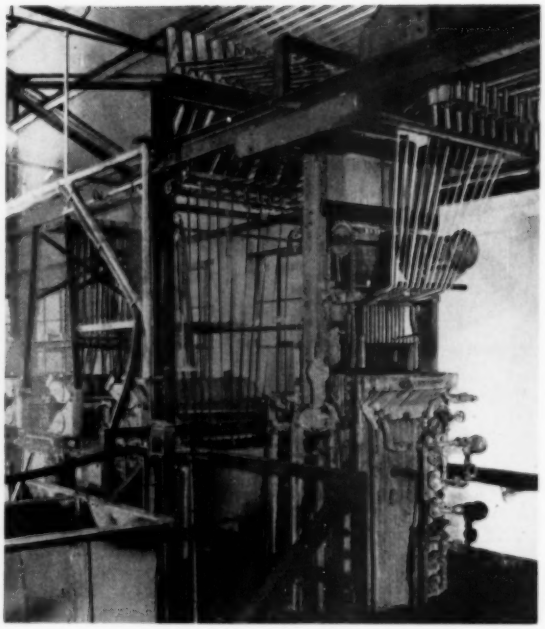
Vertical-Stripe Machine

Model VS100 double-head flat-knitting machine, developed by Lamb Knitting Machine Co., Chicopee Falls, Mass., produces vertical-stripe true-rib borders with no welt or tuck to hide the opposite colors. The machine knits two colors on every course.

The machine has a high bridge and a two-bar arrangement with two yarn carriers on each head. Individual-control plunger-system yarn carriers with positive stoppers can be adjusted to stop the yarn carrier at any desired point to a space as small as two needles.

Approximate production is 300 yds. per 8 hrs. The machine knits half- or full-cardigan stitches with or without rack. Wesco stop motions are fitted with 4, 6, or 8 ends. The model is available in cuts from 4 to 10 per inch.

Circle T-7 on Reader-Service Card



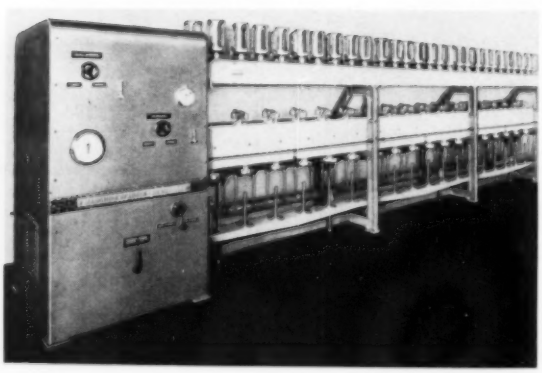
Molten-Metal Dyeing Machine

A molten-metal dyeing machine that is designed especially for tapes, warps, and other narrow fabrics has been marketed by Standfast Dyers & Printers Ltd., Caton Rd., Lancaster, England.

A model is available that will handle a single tape, and there is a larger model suitable for dyeing up to 12 tapes or ball-warp strands.

The dyeing principle is the same as that used for piece-goods dyeing, in which preheated fabric is run into a bath of reduced dye that floats on a molten eutectic alloy enclosed in a U-tube. Excess liquor is squeezed out by the pressure of the molten metal, and the fabric passes from the U-tube to the oxidizing and soaping processes common to vat-dyeing practice. Production of the new models is 2,500 yds. per hr. for the single-strand machine, and up to 28,000 yds. per hr. for the multistrand machine.

Circle T-8 on Reader-Service Card

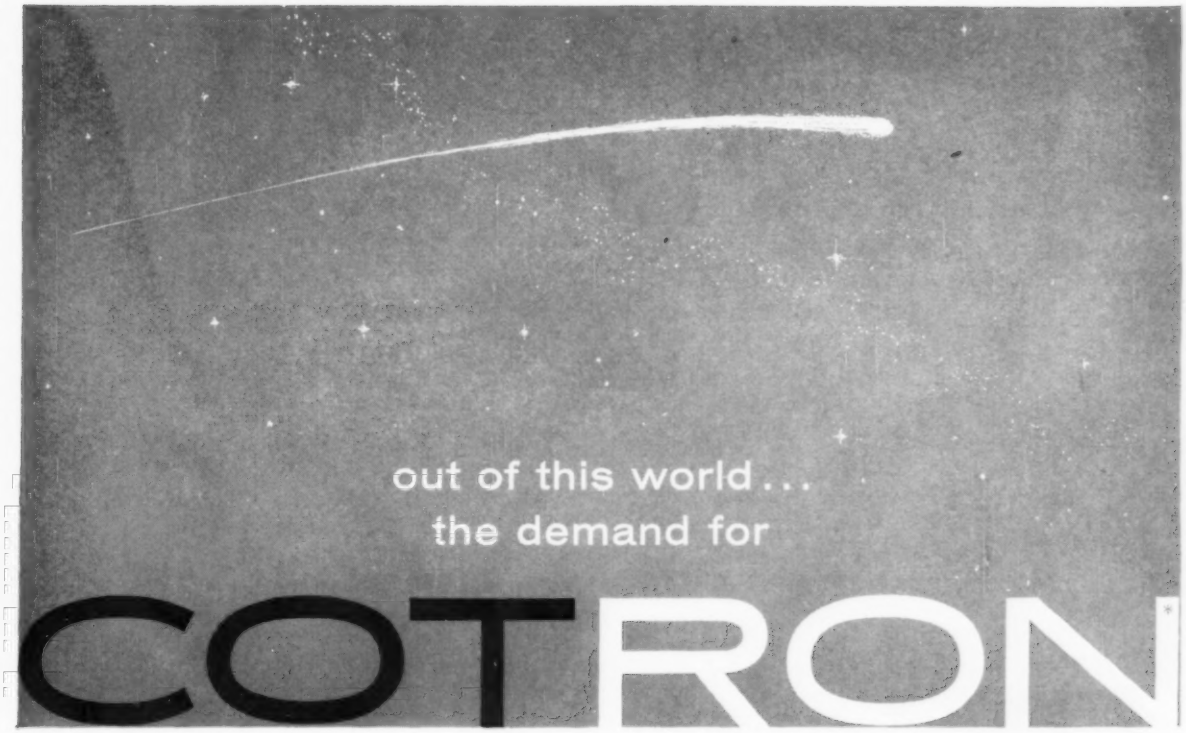


Cord-Laying Machine

A high-capacity cord-laying machine developed by Maschinenfabrik Memmingen K.G., West Germany, features increased speed of supply and take-up spindles, larger packages, and an infinitely variable-speed transmission.

Three models are available for nylon, cotton, rayon, flax, sizal, manila, and jute. A. Schnitzer, 264 Orange Ave., Irvington, N. J., is U.S. agent.

Circle T-9 on Reader-Service Card



Investigate COTRON fabrics, the new family of fabrics made of cotton and AVISCO® rayon and you'll see the REASONS are OBVIOUS!

- Richer Lustre • More Luxurious Hand • Brighter Colors
- Better Drape • Whiter Goods • Improved Light Fastness
- Better Definition of Print Pattern

. . . and here are two more reasons—but just as important:

Resinated COTRON compared to resinated all-cotton fabrics shows

- Greater strength after repeated laundering
- Marked improvement in strength retention after repeated laundering with chlorine bleach

The American Viscose Corporation is planning big 4-color, double-spread national magazine ads, trade ads, complete department and specialty store promotions, window and in-store displays, dealer mat ads, statement inserts—*the whole works!*

This program is fast bringing *substantial* results. People everywhere are getting to know about COTRON so well they're already asking for goods tagged with the COTRON tag. Get "on the blend wagon"—cash in on the demand for COTRON fabrics *now!*

The American Viscose Corporation is more than pleased to make available to you its Technical & Textile Service Department's vast store of information, experience and know-how regarding COTRON. A trained, highly competent technical representative is at hand at all times, ready to assist you with any COTRON fabric applications.

*Trademark of American Viscose Corporation for a fabric of cotton and AVISCO® rayon.

AMERICAN VISCOSE CORPORATION
350 Fifth Avenue, New York 1, N. Y.

AVISCO®

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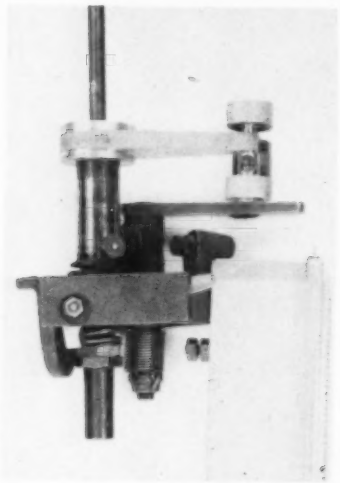


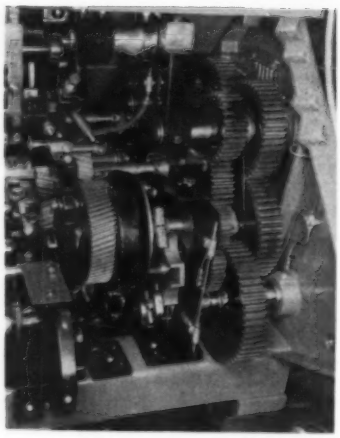
Stretch-Yarn Attachment

A spindle attachment for throwing frames supplied by Valco Machine Co., 109 35th St., Union City, N. J., allows stretch yarns to be made at speeds up to 50,000 rpm. Production per week of an 80-spindle machine is 350 lbs.

The attachment consists of an auxiliary spindle that fits on any uptwister spindle bracket. An extra pulley is put on the existing spindle to give a 5-to-1-ratio drive to the false-twist spindle.

The heater box is a contact-type heater that is fixed in the space occupied by the bottom deck. A current control is supplied to give heaters the correct current for the yarn being run.

Circle T-10 on Reader-Service Card



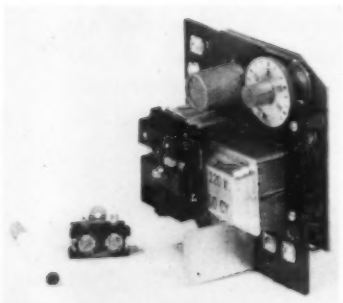
Comber Change-Over

The epicyclic roller motion, an integral part of 56- and 57-model combers, is now available in a change-over for 50-, 52-, and 54-model combers, according to Saco-Lowell Shop, 50 Batterymarch St., Boston 10, Mass.

The change-over makes it possible for older combers to produce 60 lbs. of 60-grain sliver per hour, and up to eight frames can be run by one operator.

Roller motion improvements center around a shorter crank and reinforced spider. The hub of the sun gear is heat-treated for longer life.

Circle T-11 on Reader-Service Card

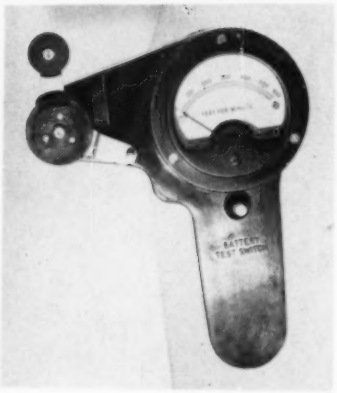


Temperature Controller

A transistorized amplifier relay system for remote control of temperatures has been introduced by Minneapolis-Honeywell Regulator Co., Control Device Div., 2747 Fourth Ave. S., Minneapolis, Minn.

The highly versatile system includes a compact amplifier that serves as a temperature controller and as a vibrationproof mounting. Thermistor mountings can be located as much as two miles away and are available in sizes and shapes to fit the application.

Circle T-13 on Reader-Service Card



Yarn-Speed Meter

The HATRA yarn-speed meter, now distributed by Scott & Williams, Inc., Laconia, N. H., is used to measure yarn speed and maintain the uniformity of knitting on revolving-cylinder machines. The meter can be carried in a pocket, and it has a scale that reads from 0 to 600 ft. per min. in units of 10.

The yarn is engaged by the guide pulley and passed over the measuring wheel. The yarn should drive the measuring wheel for a few seconds before a reading is taken. On a smooth-running machine, reading of one half unit or 5 ft. per min. can be made. This reading represents an accuracy of 1 to 2%.

Measurement and readjustment take between 15 and 60 secs. per feed. Most yarns of all fibers can be run on most types of machines. Patterned fabrics can be checked where feeds knit in groups at different values.

Circle T-12 on Reader-Service Card

Spinning Rings

Two spinning rings that require only five or six traveler changes while being broken in have been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

The Speed-Tex casehardened ring features a special alloy finish that permits extra-high traveler speeds and long usage.

The Model-01C ring, designed for large-package spinning, has a full-width inner flange and a narrow outer flange. For use with this ring, a special traveler with a low center of gravity was developed by Victor Ring Traveler Div.

Circle T-14 on Reader-Service Card

METLON
introduces
ULTRA-VAT
METLON®
with MYLAR*
METALLIC YARN
especially for
automobile upholstery, outdoor furniture
...anything that has to take extra wear,
and get along with minimum care!

SO LIGHT-FAST...A 300-Hour Fadeometer Test Couldn't Faze It!
New Ultra-Vat Metlon-with-Mylar was subjected to the equivalent of many years of exposure to blazing Arizona sunlight...never lost one iota of its brilliance!

SO STRONG...It Can Stand Up To Any Manufacturing Process!
New Ultra-Vat Metlon-with Mylar is exceptionally resistant to bleaching, mercerizing, vat-dyeing, Sanforizing...even to vulcanizing and carbonizing temperatures and processes!

SO STURDY...It's Guaranteed Washable By The American Institute Of Laundering!
New Ultra-Vat Metlon-with-Mylar won't dim or tarnish with repeated dousings...is impervious to cleaning fluids and salt air. Stays soft...won't scratch or catch!

New Ultra-Vat Metlon-with-Mylar opens up a wide world of possibilities for designers and manufacturers...adds a potent new sales appeal you'll want to add to your line right away!

FOR SOURCES AND FOR FURTHER INFORMATION
ABOUT ULTRA-VAT METLON-with-MYLAR

...write or phone the

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432 Fourth Avenue, New York 16, New York
A SUBSIDIARY OF THE ACME BACKING CORPORATION
**DuPont's Polyester Film*

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Hosiery Attachment

A controlled-contour seaming attachment to aid Getaz-toe seaming has been announced by Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill. Stockings are tied in lots of 1 doz. pairs and laid flat on a shelf. The stockings need not be untied for seaming. After seaming, the foot portion is folded away from the unseamed stockings.

The operator need only place the stocking on the template lined with plush to prevent slippage. The hinged top section is lowered to hold the stocking correctly for seaming. When the machine starts, the template holding the stocking revolves about a 100° arc.

The toe seam is repeated exactly on each stocking because it is guided by the attachment. Near the end of the arc, a Micro switch actuates a solenoid that raises the foot automatically. The selvage removed in the seaming operation drops through a convenient hole in the base plate of the attachment to a chute and a container on the floor.

Circle T-15 on Reader-Service Card

Hosiery Form

A form for the Getaz-toe seamless stocking has been developed by Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill. The form is made of stainless steel to exact specifications.

To fashion the toe and foot perfectly, a short center groove in the foot section is used about ½ in. from the tip of the toe and extends several inches toward the heel.

When steam is applied and normal shrinkage occurs, the groove holds the gusset seam perfectly in place. Because of the exact positioning of the seam, the toe reinforcements match and coincide on both parts of the finished stocking. The forms can be made for any retorts and are available on a sale or rental basis.

Circle T-16 on Reader-Service Card

Hosiery Seaming Machine

A two-needle three-thread machine for closing toes on Getaz loopless-toe stockings has been announced by Merrow Machine Co., Hartford, Conn. The machine, designated M-4D-45, is in the Class-M series, and it produces a flat butted seam that cannot be felt by the wearer.

The machines have automatic lubrication, and they have been specially developed for stockings that require no looping.

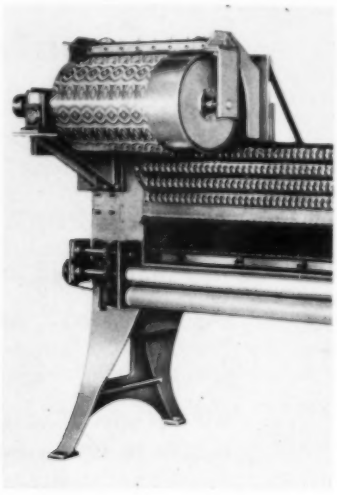
Circle T-17 on Reader-Service Card

Electronic-Counting Unit

A series of transistorized electronic-counting packages, Model N-1 Count-Pak, is available from Veeder-Root, Inc., 20 Sargent St., Hartford, Conn. The unit counts accurately at speeds up to 30,000 counts per minute for more than 1-billion counts.

This multipurpose counter is used to measure lengths, count high-speed shaft revolutions, and count packages.

Circle T-18 on Reader-Service Card

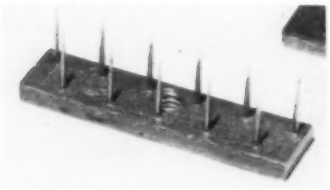


Pattern Tube for Tufting

A phenolic pattern tube for tufting machines used to tuft patterned rugs and bedspreads has been developed by Synthane Corp., Oaks, Pa. The tube is furnished for patterns made by Cobble Brothers Machinery Co., Inc., Riverside Dr., Chattanooga, Tenn.

The laminated plastic material does not shred or split in use, and pattern indentations are cut into the tube cleanly.

Circle T-21 on Reader-Service Card



Tenter Pin Plates

Tenter-frame pin plates made to meet various specifications are being marketed by Southern Textile Works, P. O. Box 406, Anderson, S. C. The plates can be supplied with Teflon or other protective coatings for the base and acid-resisting pins if necessary. Pin spacing and placement angle can be made to the customer's specifications.

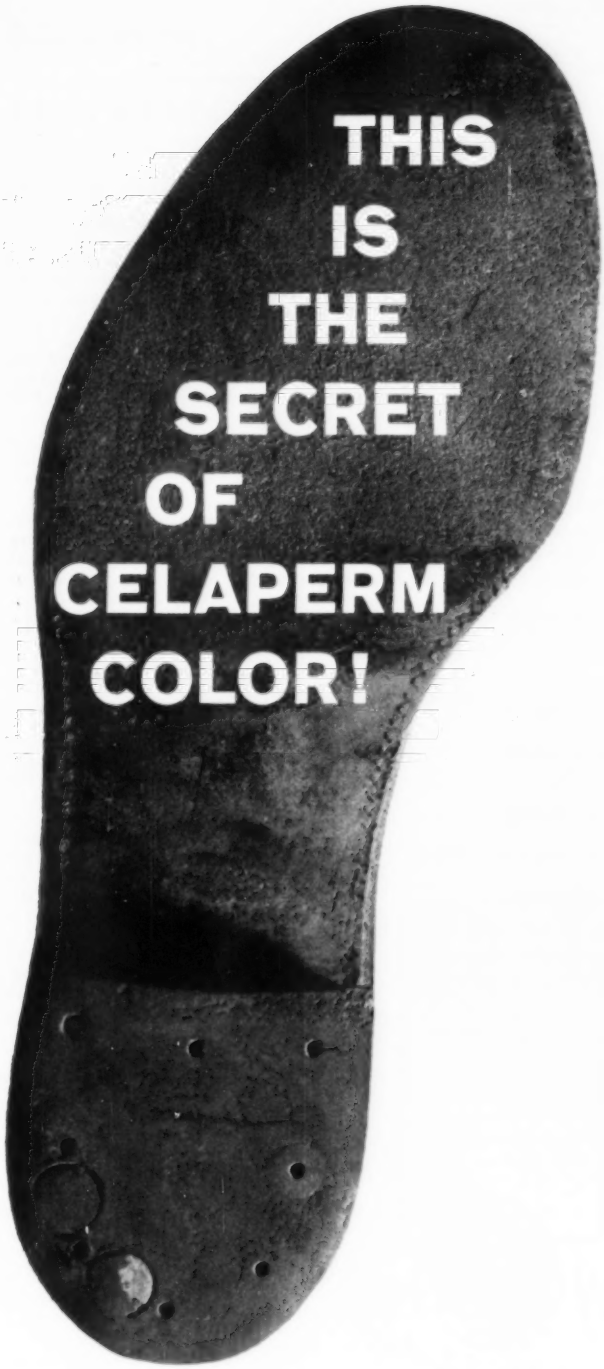
Circle T-19 on Reader-Service Card

Traveler Cup

A traveler cup that can be attached with steel straps to any upright stand on Gwaltney frames has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. The cups have a sliding cover.

Circle T-20 on Reader-Service Card

CONTINUED ON PAGE 118



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Export: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16, N. Y.

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STARCH FACTS

FREE . . . INFORMATIVE TECHNICAL ARTICLES ON TEXTILE STARCHES

During the last several months we have been running a series of articles in Textile World titled "What You Should Know About Starch." These have been written by J. M. Seitz, our Director of Research, and have been published as a service to our friends in the textile industry.

To date these articles have covered such subjects as:

1 THE SIGNIFICANCE OF pH
2 SIGNIFICANCE OF STARCH VISCOSITY
3 WATER SORPTION OF CORN STARCH

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NEW LITERATURE

TEXTILE MACHINERY & AUXILIARY EQUIPMENT

Air conditioning—Various phases of central-station air conditioning described in illustrated booklet from Parks-Cramer Co. (F-1)

Ovens, dryers, and heaters—Described in 8-p. booklet from J. O. Ross Engineering Div., Midland-Ross Corp. (F-2)

Cycoil acid-mist and vapor collector—Described in bulletin from American Air Filter Co., Inc. (F-3)

Testing instruments—Three bulletins give facts about (1) SMT tensionmeter, (2) Celanese wrinkle tester, and (3) accelerated soil tester for carpets and fabrics. Custom Scientific Instruments, Inc. (F-4)

Humidification—Gradu-Vac system of humidification explained in folder from Parks-Cramer Co. (F-5)

Vapor condenser—Functions of Aero sectional vapor condenser explained in booklet from Niagara Blower Co. (F-6)

Yarn meters—The Hamilton yarn meter for adjusting knitting machines and the H.A.T.R.A. speed meter for timing revolving cylinders are described in a folder from Scott & Williams, Inc. (F-7)

Scallop-cutting machine—For embroidered fabrics described in bulletin from American Production Machine Co. (F-8)

Dust precipitator—That operates electronically at face velocities up to 600 ft. per min. described in booklet from American Air Filter Co., Inc. (F-9)

Recording instruments—Product specification gives technical details of 12 recording instruments. Bailey Meter Co. (F-10)

Calender drive — With synchronized hydraulic center winder described in bulletin from Oilgear Co. (F-11)

Cloth guiders—Motor-driven mechanical guiders for all types of fabric at various stages of processing described in folder from Ernest L. Frankl Associates. (F-12)

Insulated motors—Technical bulletin explains why motors with silicone insulation are best for certain uses. Dow Corning Corp. (F-13)

Pneumatic steel strapper—Applications and specifications are given in 8-p. booklet from Acme Steel Co. (F-14)

upholstery and drapery fabrics *look better* *sell better* touched with glittering...

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METALLIZED MYLAR* • METALLIC • SUPPORTED METALLIC

Fairtex with Foil or Metallized Mylar* or Fairtex Butyrate Metallic yarns woven into your upholstery and drapery fabrics add the luxury look!

They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

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1953

Tennant-maintained floor in carding department of a large southern mill

Only the TENNANT System can keep your floors this clean

Chances are that your floors *can* look like this the year around . . . *if* you use the TENNANT SYSTEM.

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Floor seals last longer. Newly-developed TENNANT Floor Seals, specially designed for textile mills, last longer than any comparable materials we know of. This ends need for frequent recoating and reduces annual maintenance costs.

Makes floors easier to clean. The exclusive TENNANT process *actually increases dirt-resistance of the average textile mill floor by 300%*. Soilage wipes off easily . . . in a fraction of the usual time.

Keeps floors bright. The TENNANT SYSTEM's exclusive cleaning techniques make it easy to keep your floor attractive month-after-month . . . even under heavy traffic.

You'll also enjoy added benefits in improved safety and employee efficiency when your mill is a bright, pleasant place to work in.

Your TENNANT Man is a qualified floor expert, ready to give free estimate of savings possible in *your* mill. For full information, write G. H. Tennant Co., 737J N. Lilac Drive, Minneapolis 22, Minn.

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Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

NEW LITERATURE Continued

Ceramic magnet for tramp-iron removal—Described in technical bulletin from Stearnes Magnetic Products Div., Indiana Steel Products Co. (F-15)

CHEMICALS & SUPPLIES

Rust-preventive cleaner—A 20-p. folder tells how to clean textile machinery with Immunol, a nontoxic and nonflammable solvent. Harry Miller Corp. (F-16)

Water and waste treatment—Technical bulletin shows how instruments can be used to control water treatment. Fischer & Porter Co. (F-17)

Portable tools—1958 catalog illustrates and gives specifications for portable electric and air tools. Thor Power Tool Co. (F-18)

Antifoam agents—Information sheet and samples of instant antifoams are available from Hodag Chemical Corp. (F-19)

Antistatic agent—Data sheet gives basic characteristics of antistatic agent 575 and some conditions and techniques of its application. E. F. Houghton & Co. (F-20)

Paraformaldehyde — Technical information and prices from Celanese Chemicals Div., Celanese Corp. of America. (F-21)

Rubber-roll compound—Data sheet describes properties of general-purpose compound suitable for fabrication of wet-processing rolls. Silicons Div., Union Carbide Corp. (F-22)

Water pollution — Booklet explains portable laboratory and pilot-plant facilities for the study of industrial water and air pollution and sewage treatment. Roy F. Weston, Inc. (F-23)

Purified papain—Announcement that crude papain without foreign matter is now available from Meer Corp. (F-24)

Cationic dyestuffs—Bulletin covers an improved method of applying cationic dyes to acrylic fibers. Chemstrand Corp. (F-25)

Tool storage—A new tool chest and drawer section described in a bulletin from Snap-on Tools Corp. (F-26)

Lubricant—An extreme-pressure lubricant, Molylube 110-L, described in a bulletin from Bel-Ray Co., Inc. (F-27)

MAINTENANCE & ENGINEERING

Motor speed controls—Booklet describes new line of Fincor motor controls and tells how to maintain constant speed regardless of load variation. Fidelity Instrument Corp. (F-28)

Stainless-steel tubing—Technical and

Whatever you buy

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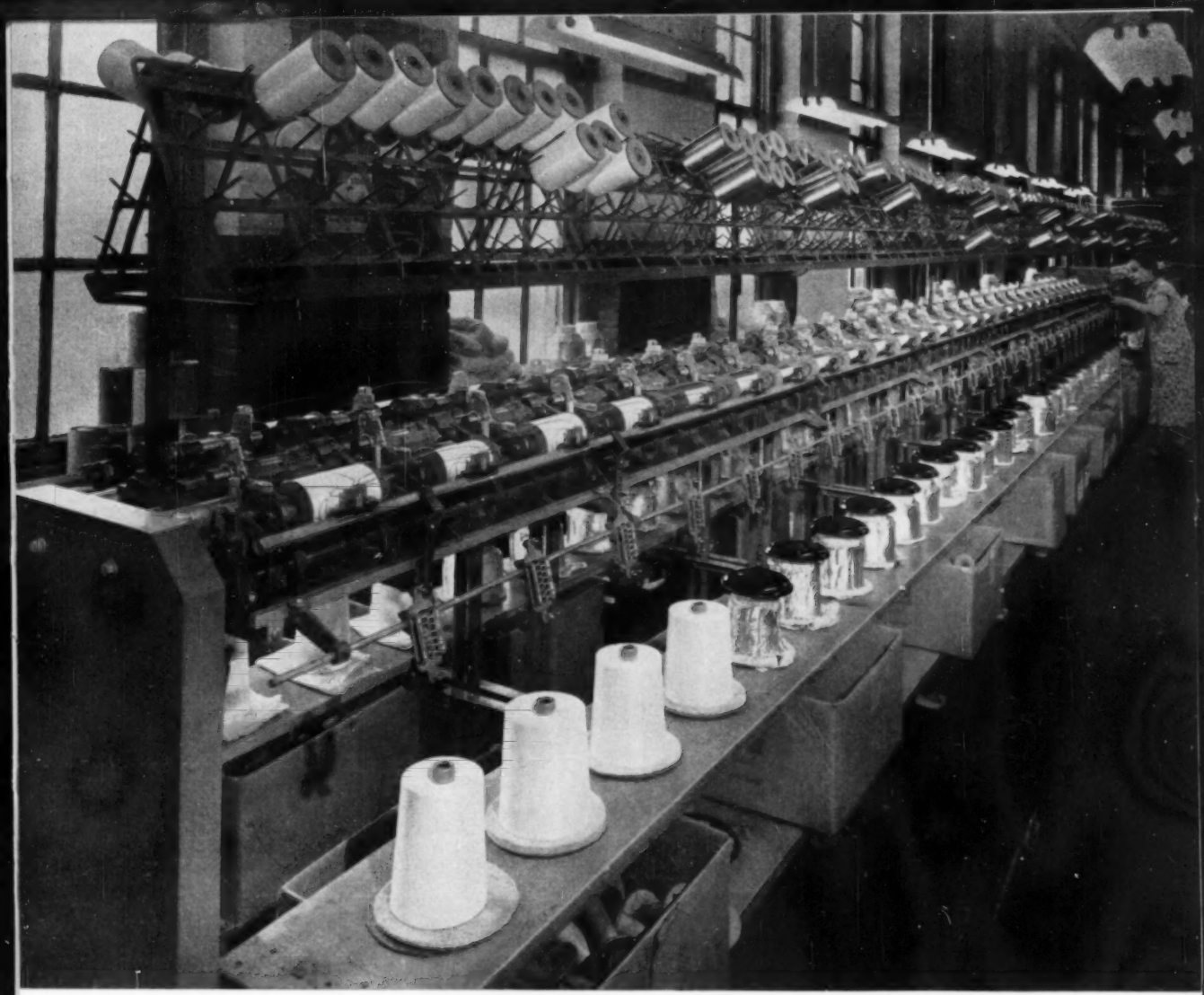

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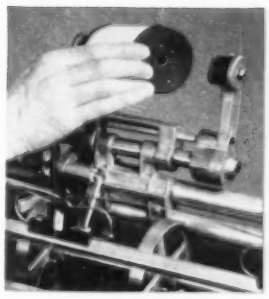
SPOOLS NEVER OVERRUN

You get nothing but uniformly full spools – no overruns and no partially filled spools – with the Kidde-Sipp Winder because the instant a spool is full, it's stopped – automatically. And with one hand your operator can doff it and load again in seconds. These advantages combined with self-threading guides and high running speed mean this: one operator can tend more spindles and turn out more poundage on the Kidde-Sipp Winder than on any other machine. For complete information, write us today.



ONE HAND does it, without touching the yarn . . . operator can doff a full spool in a split second, with a flip of the hand . . . and her fingers never even touch the yarn.

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. . . you can process more yards per penny spent for rolls IF you will use the S-W ROLL-GUARD Plan.

We invite you to make your local S-W representative prove this in your mill, on your machinery, this month.

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NEW LITERATURE Continued

use data described in bulletin from Tubular Products Div., Babcock & Wilcox Co. (F-29)

Lubricant pumps—Operated by air described in catalog from Lincoln Engineering Co. (F-30)

Welding wire—An 84-p. pocket guide of welding techniques from Air Reduction Sales Co. Div., Air Reduction Co., Inc. (F-31)

Rotary switches—Capable of switching high currents in a large number of sequences described in folder from Micro Switch Div., Minneapolis-Honeywell Regulator Co. (F-32)

Compressors—Specifications for four basic heavy-duty machines are given in folder from Joy Mfg. Co. (F-33)

Measuring valves—Data on different kinds of valves used to dispense measured quantities of fluid from Lincoln Engineering Co. (F-34)

Float valves—That permit control of liquid levels within 1-in. limits are described in catalog sheet from Atlas Valve Co. (F-35)

Teflon-lubricated bearings — Brochure gives detailed information on porous-metal bearings from Special Products Dept., U. S. Gasket Co., Plastic Div., Garlock Packing Co. (F-36)

Magnetic applications—The use of magnets in materials-handling and separation equipment is discussed in a 48-p. booklet from Eriez Mfg. Co. (F-37)

Gate valves—Two improved forged-steel gate valves described in leaflet from Lunkenheimer Co. (F-38)

Boiler tubes—Technical data card on welded carbon-steel boiler tubes from Tubular Products Div., Babcock & Wilcox Co. (F-39)

Arc welding—A 24-p. booklet on reducing costs by proper care of arc-welding circuits from Lenco, Inc. (F-40)

GENERAL

Copying process—Various kinds of diazotype direct-positive printing are described in 12-p. illustrated booklet from Charles Bruning Co., Inc. (F-41)

Fire-protection equipment — New 1958 184-p. catalog of approved equipment for industrial fire protection from Factory Mutual Engineering Div., Associated Factory Mutual Fire Insurance Cos. (F-42)

Fire pumps — Three underwriter-approved pumps described in bulletin from Peerless Pump Div., Food Machinery & Chemical Corp. (F-43)

Greaseproof mat—With nylon rein-

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AT THE SPRINGS COTTON MILLS

DIEHL transmitters cut loom downtime

The management of The Springs Cotton Mills, Inc. is definitely interested in cutting downtime wherever and whenever possible. Therefore, in the world's largest weave room under one roof . . . in their Lancaster, S. C. mill . . . they selected DIEHL Power Transmitters to drive some three thousand looms. As a result, Springs Mills reports loom downtime due to motor failure is "most unusual."

Springs Mills people know what they want, particularly when it comes to textile mill equipment. They know first quality equipment is the key to first quality textiles. DIEHL is proud of its part in helping Springs Mills produce highest quality goods at low operating costs. DIEHL can do the same for your mill, too. Specify DIEHL Power Transmitters for your looms.

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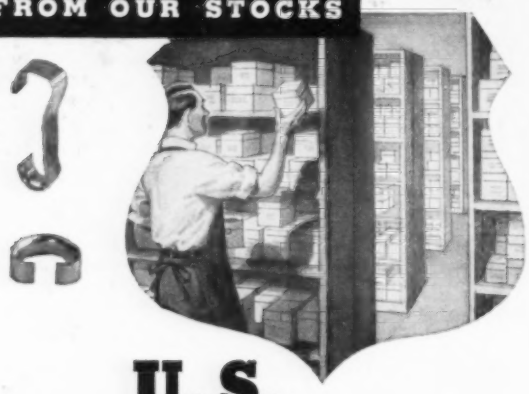

With large stocks at Providence and Greenville, our usual procedure is to anticipate your requirements so that your order can be shipped consistently from stock.

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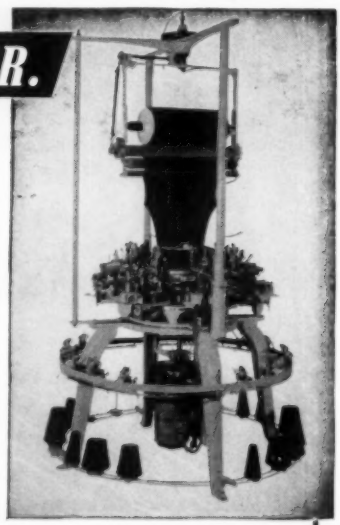
ALL NEW...
TOMPKINS S-1 JR.



MAKES THE MOST PERFECT CLOTH POSSIBLE

HERE'S A TYPICAL EXAMPLE...
Model S-1 Junior making fleece with 400-lbs. of Carter 26's and 8's —five feeds, 18" cylinder, running time 68-turns per minute . . .

- **MINIMUM OF IMPERFECTIONS AND BROKEN NEEDLES**

You can produce any class of cloth in the wide range of circular spring needle knitting—in greater quantity, with less waste and less needle breakage—on the New S-1 Junior! It gives you the proven Tompkins system in fully modern form . . . with triple stop motions, furnishing wheels, new gearless drive, automatic oiler and air cleaner! Get the full story now . . . be among the first to profit!

TOMPKINS BROS. CO.
623 ONEIDA ST. • SYRACUSE 4, N. Y.
Makers of Circular Spring and Latch Needle Knitting Machinery...Since 1846

forcements announced in bulletin from American Mat Corp. (F-44)

Steel equipment—Reference manual for office, warehouse, and shop equipment from Equipto. (F-45)

Lifting cranes—Booklet describes various kinds of booms available for converting lift trucks to yard cranes. Hyster Co. (F-46)

Data-processing system—That features pinboard programming for processes where variables are recorded is described in bulletin from Beckman Systems Div., Beckman Instruments, Inc. (F-47)

Small-business film—For the guidance of small-business management described in an announcement from Dun & Bradstreet, Inc. (F-48)

Automation — Production control through the extension of automation is explained in brochure from Control Systems Co. (F-49)

Casters—A 20-p. catalog covers many kinds of casters and gives installation and selective data. Faultless Caster Corp. (F-50)

Pointers for Supervisors

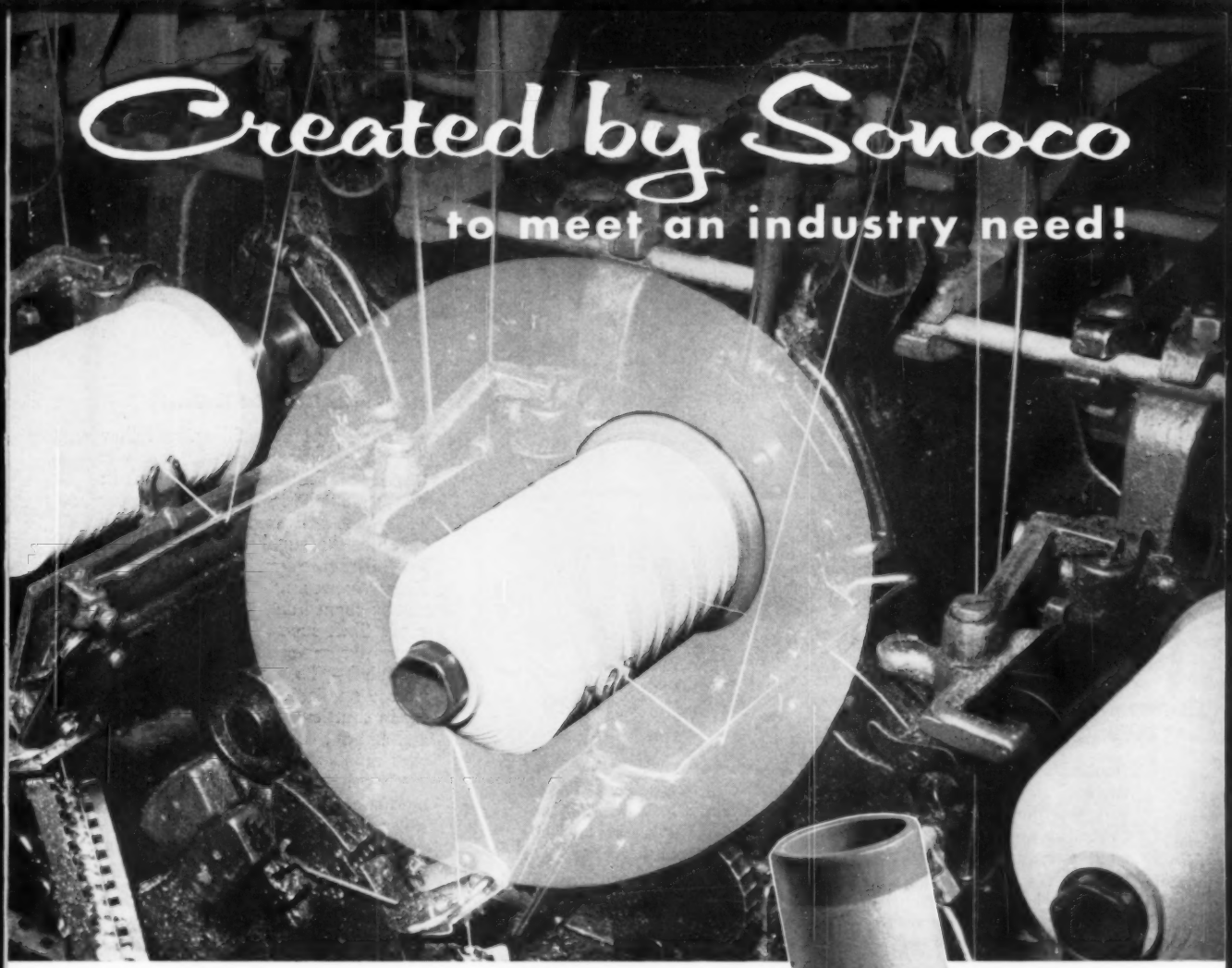
CONTINUED FROM PAGE 81

his true feelings about the company and the treatment he has received.

This calls for two talents in the technique of exit interviewing. The first is to put the employee in a frame of mind where he is willing to be candid with you. This means that the employee should feel that what he says will not jeopardize his status in the future, with your company, if he should seek re-employment, or with another prospective employer. He should feel, too, that you really are concerned and interested in finding out his reactions to his experience on the job.

A second talent called for is the ability to do some adroit questioning. For example, many employees quit with the explanation they are leaving for another job, or a better job. In some instances this answer is true; but in others the employee simply says it because he believes it is the simplest and least controversial way to cover his decision to resign.

You have a good chance of getting to the heart of the matter if you ask him something about the job he is planning to take, what he will be doing, when he is supposed to report, etc. If it develops that in fact he does not have another job, these questions are likely to bring it to light and enable you to get on a basis where the



The need was for an economical industrial thread carrier. SONOCO answered this need with a "job-engineered", tapered base single head spool that would deliver free with uniform tension.

However, low cost is only one of the many benefits. The unique design, coupled with rigid quality control in manufacture, results in dependable performance for better packaging. These sturdy carriers protect both your reputation and your profits!

And, with SONOCO single head spools, you can select from a wide range of research-developed surfaces. Barrels may be plain, ground, scored, and colored lacquer tips can be applied for identification.

For nearly 60 years, SONOCO has supplied the industry with dependable, low cost paper carriers. Let this experience help you!

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1650

real reasons for his quitting can be talked about.

All of us do not have these talents in equal measure, but adequate ability will be developed with experience.

Be Sure To Follow Up

Finally, on this matter of exit interviewing, there is the need to follow up where action on your part is called for.

Your long-range objective is to find out conditions that may be hampering good employee relations. It helps little if you determine facts that give you cause for concern and drop the matter there.

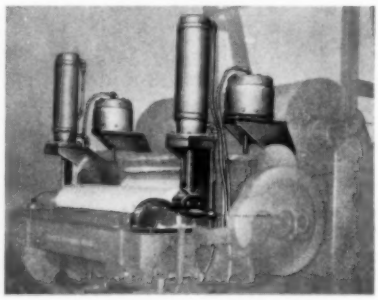
In a surprising number of situations, the problems divulged will be relatively small and localized and therefore subject to improvement within the department. As a supervisor with the responsibility for good employee relations, it is your job to take constructive action where you have the authority to do so.

Housing starts say so . . . the stock market says so . . . retail sales say so . . . orders say so . . . and economic experts tell we have a very short time to get ready for a terrific demand . . . a demand that cannot be profitably met with obsolete equipment. Modernized equipment offers more production per machine . . . more per employee.

LIVINGSTON & HAVEN, INC. offers textile mills proven-on-the-job systems that enable *existing* machinery to produce more . . . to produce better quality . . . and to produce at greater profit.

Write for complete information about:

* **LONG PNEUMATIC LAP CONTROL SYSTEM**
  Bigger laps (Cotton and synthetics), higher quality, minimum waste, minimum maintenance.
* **LONG PNEUMATIC SLIVER LAP CONTROL SYSTEM**
  Higher quality laps of any practical size, may be installed on existing Whitin and other makes Sliver lap—ribbon lap machines.
* **L&H PNEUMATIC PRESSURE ROLL CONTROL SYSTEMS**
  Faster, even start-up, constant tension, less breakage, faster doffing time, minimum maintenance.



Phantom view of LONG Pneumatic Lap Control System installed on picker in a Southern mill.

* **L&H PNEUMATIC LAP PIN PUSHERS**
  Equally effective on cotton, and synthetic laps, faster doffing time, eliminates mechanical pin removal.

* Pats. Pending

LIVINGSTON & HAVEN, INC.

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PLASTIC SHUTTLES

CONTINUED FROM PAGE 55

ing power; incorrect pick timing; harnesses timed or set incorrectly.

"Other causes are: too much heel spring; pickers not parallel; too limber or too stiff checkstraps; shuttle not boxing correctly; lay ends, back box plates, and race plates not aligned properly; worn head gears; loose lay swords, and too shallow grooves in shuttles.

Preventive Checklist Is Used

"To prevent kinky filling, we follow this preventive-maintenance schedule: Check all shuttles once each shift; dress and polish all shuttles every 24 hrs.; at each warp-out, the loom is checked thoroughly for worn parts and all loose parts are tightened. Every six weeks, all looms are completely aligned and all parts are tightened. Shift supervisors spot-check all preventive maintenance."

Mill B—"To prevent kinky filling, we use standard bristles and opossum fur in shuttles; the number of bristles and amount of fur varies according to yarn numbers.

"Wool is used on the split binders on some fabrics. Proper harness setting and timing are essential."

Mill C—"We control kinky filling by using finer-dent reeds and drawing fewer ends per dent. We store filling in the weave room for 16 hrs. before it's used."

Mill D—"We use wool on the right-hand front box plate (split binder). To fasten the wool, we drill a hole in the box plate at an angle so that it comes out in the center of the box plate. Some loomfixers use warp yarn instead of wool."

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 108

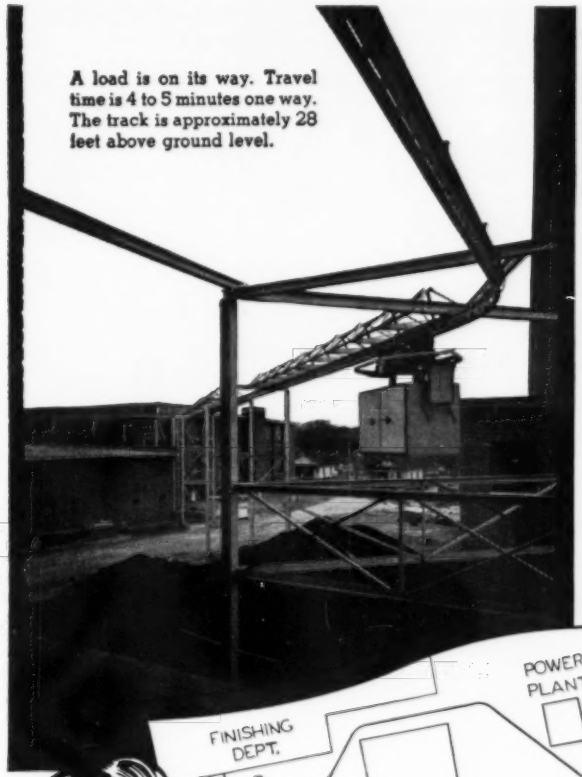
Tenter-Chain Lubricant

Adequate lubrication at 400° F. or more can be provided for tenter chains with Keystone 49, a product of Keystone Lubricating Co., 3100 N. 21st St., Philadelphia, Pa. The product does not gum or form carbonaceous residues.

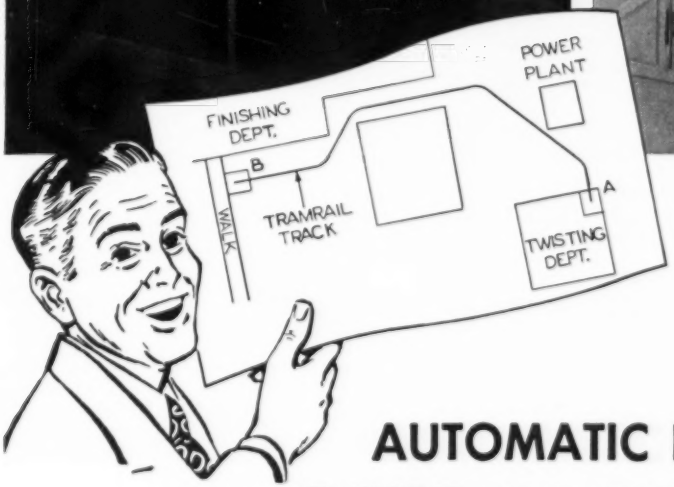
Circle T-22 on Reader-Service Card

Dripproof Drive

The Rectiflow drive for all applications requiring variable speeds and constant horsepower and torque, such as in spinning, has been announced by Westinghouse Electric Corp., Mo-



A load is on its way. Travel time is 4 to 5 minutes one way. The track is approximately 28 feet above ground level.



Four trucks are accommodated by the Tramrail freight van, which, at the press of a button, is on its way without attendant. The van stops and lowers automatically at each end of the system. In fair weather or foul it travels with safety and dispatch. Points on each end of Tramrail carrier guard pry open doors of loading station automatically. The system requires very little building space because it need not be enclosed.

AUTOMATIC DISPATCH SYSTEM **PAYS** FOR ITSELF EVERY TWO YEARS

AN enclosed freight carrier shuttling over a 666 foot Cleveland Tramrail archbeam track between the Twisting and Finishing Departments of the China Grove Cotton Mills Co., China Grove, N. C., is making a tremendous saving every year.

This system has eliminated a drudgery that was disliked by labor and costly to management. No longer is it necessary for men to push and lug floor trucks up ramps, on elevators and over long walks between the buildings. No longer is the work held up because of rain or inclement weather. Frequent accidents from manual hauling are done away with.

For the investment involved, this automatic system is paying large dividends in profits and convenience for this mill which is one of the largest producers of thread yarn in the South.

Write for free Engineering and Application Booklet No. 2008. Packed with valuable information.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 8473 E. 287 ST. • WICKLIFFE, OHIO

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For Dept., Buffalo Plant, Buffalo 5, N. Y. Features include enclosed drip-proof construction, high efficiency, and a fan-cooling system.

Circle T-23 on Reader-Service Card

Viscometer for Starch Pastes

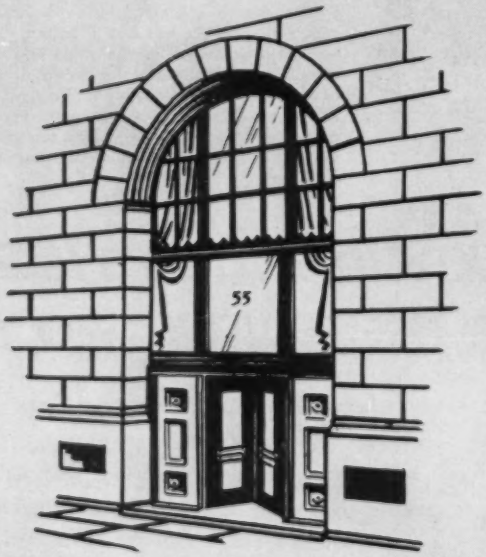
A viscometer for measuring and recording the consistency of starch pastes, developed by Gaertner Scientific Corp., 1201 Wrightwood, Chicago, Ill., completes quality-control tests at the rate of about three per hour. Results can be determined to a repeating accuracy of ±1%.

The instrument is a stainless-steel beaker immersed in a temperature-controlled water bath. A propeller driven through a gear system stirs the paste in the beaker. As the water temperature is raised, the viscosity of the paste varies and the changes cause the propeller to turn faster or slower. The differential torque is transmitted to a dynometer and registered as a pen trace on a continuously moving paper-graph recorder.

Circle T-24 on Reader-Service Card

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



Textile Banking Company

55 Madison Avenue, New York 10, N.Y.

Providing operational financing for the apparel, electronics, furniture, leather, plastics and textile industries.

Subsidiaries:

T. B. C. Associates, Inc., New York Southwest Texbanc, Inc., St. Louis

Pawl for Loom Battery

An improved hold-back pawl for loom batteries has been developed by Draper Corp., Hopedale, Mass. The pawl has a strengthened lug to reduce breakage caused by the prolonged impact of related battery parts at the bobbin transfer. This hold-back pawl is used with a hold-back feed pawl that has a strengthened spring.

The combined parts have no oil holes, and a bronze bushing in the casting bearing eliminates oiling entirely. Therefore cleaner filling yarn is woven.

The parts are available for X-2, XD, XD (2x1), XP, XP-2, and XL looms with No. 21, 23, 24, and 28 batteries.

Circle T-25 on Reader-Service Card

Roll-Handling Truck

An electric fork-lift truck that will tier rolls of fabric or other materials in racks up to 146 ins. high has been announced by Automatic Transportation Co., Div. of Yale & Towne Mfg. Co., 149 W. 87th St., Chicago 20, Ill.

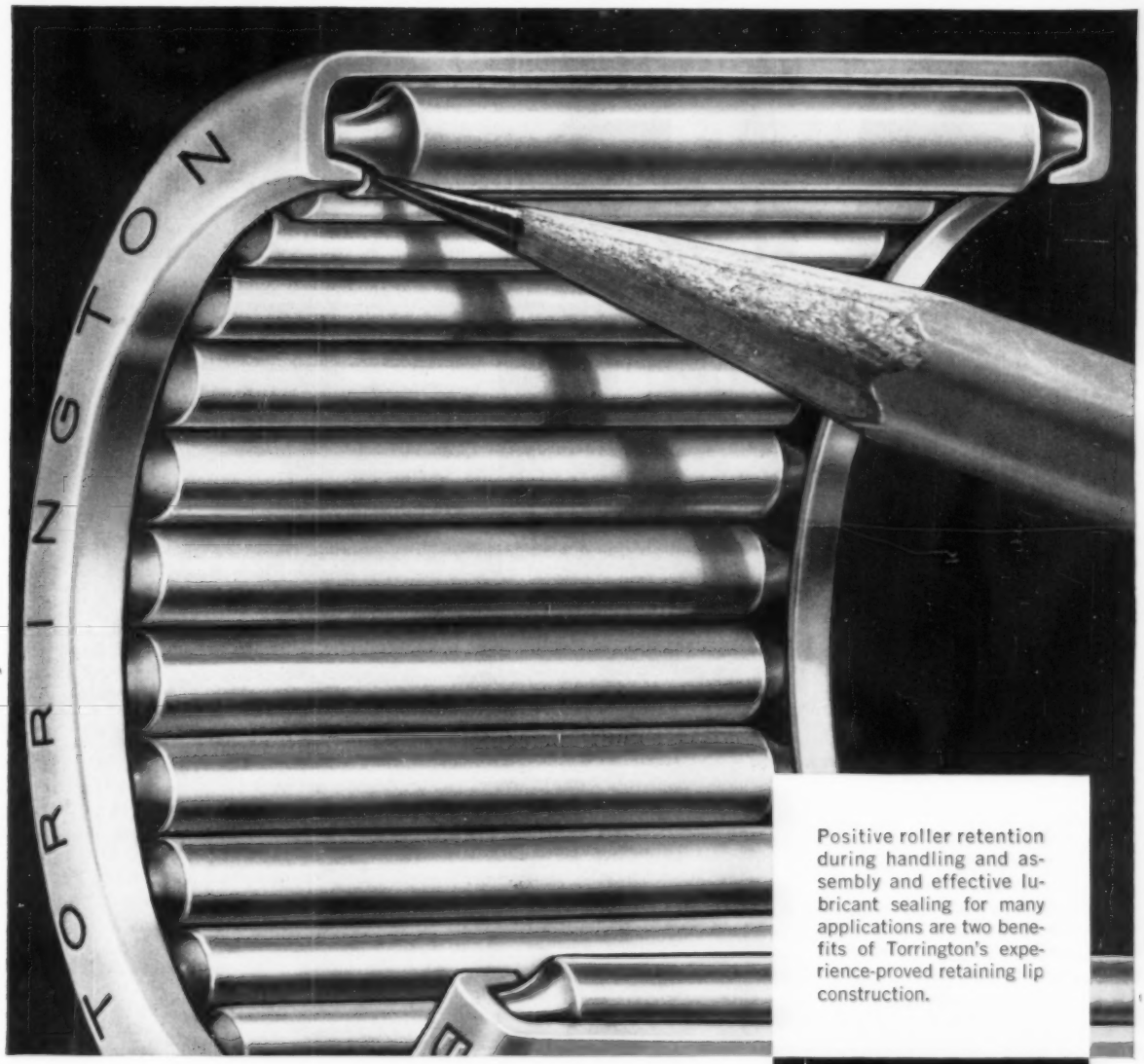
Rolls 74 ins. long by 24 ins. in diameter that weigh up to 1,500 lbs. can be handled by the truck. Flanges on the wheels make it possible for the truck to run on rails installed in the floor for added stability in handling heavy loads.

Circle T-26 on Reader-Service Card

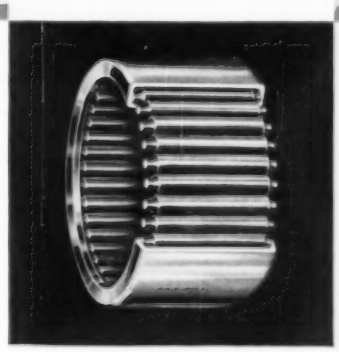
Variable-Speed Pulleys

A redesigned line of variable-speed motor pulleys has been announced by Reeves Pulley Div., Reliance Electric & Engineering Co., 1225 7th St., Columbus, Ind. Called series 90 Vari-Speed motor pulley, the units are for applications from ½ through 15 hp. with up to 4-to-1 ratios of speed variation.

Disk assemblies have only three



Positive roller retention during handling and assembly and effective lubricant sealing for many applications are two benefits of Torrington's experience-proved retaining lip construction.



This little lip makes a big difference!

The turned-in lip at each end of Torrington Needle Bearings positively retains the trunnion-end rollers and makes the bearing truly a complete unit, with no possibility of roller fall-out.

This unit construction simplifies installation and servicing. The closely controlled clearance and the large area between cup lips and shaft form an effective labyrinth seal. Also this retaining lip allows pregreasing the bearing with the proper lubricant for each application.

Long experience with the Torrington Needle Bearing in thousands of applications has proved the merit of this and other features in efficient performance and long service life. Make sure *your* product benefits from the best that experience has to offer—specify Torrington Needle Bearings. **The Torrington Company, Torrington, Conn.—and South Bend 21, Ind.**

TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

NEEDLE • SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • NEEDLE ROLLERS • BALL • THRUST

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AURORA® Vertical Sump Pumps are 'TOPS'

HEAVY DUTY and LIGHT DUTY

ALSO NON-CLOG SIZES UP TO 8"

AURORA Always PUMPS
For all sump drainage; liquids handling in industry; transfer of chemical and hot liquids; handling viscous or high temperature liquids; boiler blow-off; heating returns etc.; also for handling screened and unscreened sewage and industrial waste.
Write for
BULLETIN 104
(Heavy Duty & Non Clog)
BULLETIN 103
(Light Duty)
Write TODAY for CONDENSED CATALOG "M"
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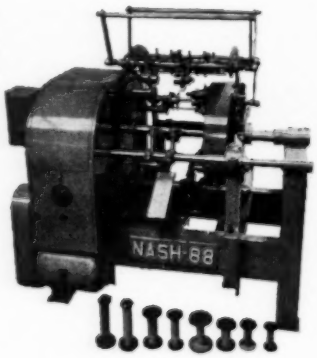
REFINISH BOBBINS

Automatically

With This

NASH 88



Keep your bobbins in peak operating condition at lower cost with a NASH "88" Bobbin Refinisher. It handles practically all types of flanged bobbins, has a separate burnishing assembly, cleans as well as finishes, and with a speed of 10 bobbins per minute minimum set-up time is required.

Write for Illustrated Bulletin

NASH

J. M. NASH *Company, Inc.*

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SPECIAL FINISHING MACHINES SINCE 1890

main parts. Compact motor bases provide precision fit and alignment and full lubrication on the shifting screw. Speed settings can be made with ease and accuracy.

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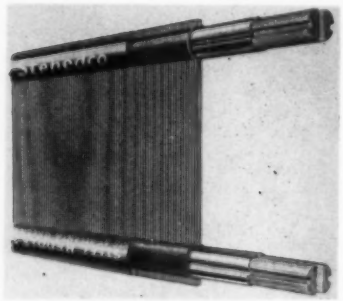


Rigid Pitch Reed

A rigid pitch reed that's twice as strong as its former pitch-band reed has been announced by Steel Heddle Mfg. Co., 2100 W. Allegheny Ave., Philadelphia, Pa.

A half-round metal band covers each wood rib, fits into a groove in the center of the rib, and is tightly gripped by twine impregnated with pitch. The reeds are able to withstand hard usage, especially for wide looms. They are being used to weave wide sheeting, wide elastic, duck, woolen, and worsted fabrics.

Circle T-28 on Reader-Service Card

Finish for Spools

A new finish for bearing surfaces in the bores of textile spools has been announced by Akron Spool & Mfg. Co., 410 Progress St., High Point, N. C.

Tolerances of 0.005 in. provide a close spindle fit and a high degree of concentricity. Spindle life is greatly lengthened because of the reduction in corrosive fretting. Doffing is easier.

Circle T-29 on Reader-Service Card

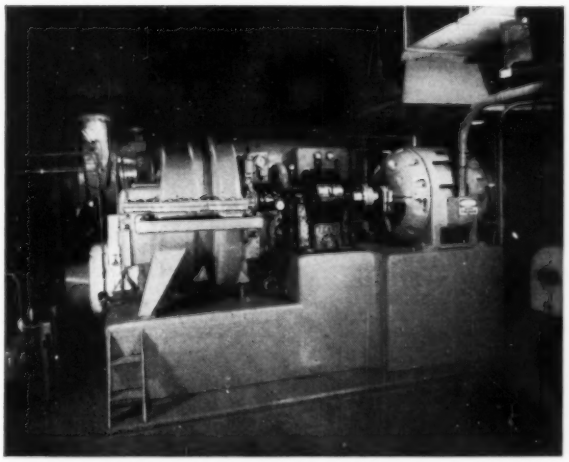
Hand Truck

A hand truck made of magnesium weighing 19 lbs. and with a rated load capacity of 250 lbs. is announced by American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa.

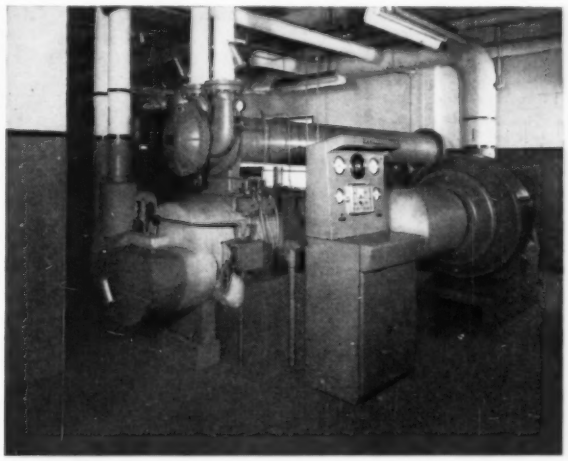
Circle T-30 on Reader-Service Card

Which Centrifugal Refrigerating Machine is better—*Open-type or Hermetic?*

That depends on your source of energy and your requirements—whether you need refrigeration for air conditioning or processing, whether you use steam or electricity, whether your load is large or small. Carrier is the acknowledged leader in the development of the Centrifugal Refrigerating Machine. Both Open-type and Hermetic are shown below. Each provides unique advantages under specific conditions. Each has been proved practical and dependable in installation after installation. With a complete refrigeration line, Carrier engineers are in position to recommend the best solution for your requirements. For information, call your nearest Carrier office or write Carrier Corporation, Syracuse, New York.



For use with any drive on applications requiring temperatures from normal to 200° below zero, and for high lift, Carrier Open-type Centrifugals offer many advantages. With capacities up to 4000 tons or more, these heavy-duty machines provide accurate, constant, automatic control of conditions in the largest installations. Thousands have been giving dependable service and scoring top performance records for decades on applications of every size all over the world.



For use with built-in motor on applications normal to air conditioning and process liquid cooling, Carrier Hermetic Centrifugals may be the answer. Their capacities range from 90 to 1100 tons. Light in weight and compact, these Carrier Centrifugals are the only hermetics with such advanced features as refrigerant-cooled motors through the entire capacity range, hydraulic-powered capacity vanes and electronic self-contained controls for completely automatic operation.

AIR CONDITIONING · REFRIGERATION Carrier

For more data, write this page number on Reader-Service card. →

Is this the World's
Toughest Test
For Brushes?

Jenkins' METLKOR
Scrubber Brush

When Dewey and Almy Chemical Company developed their high-speed blanket printing process "DAREX VERSA-PRINT" a difficult problem arose. Colors picked up by the "DAREX" embossed blanket had to be removed with each turn around . . . colors that contained gums, resins, rubbers, etc. They had to be removed by solvents, detergents and high pressure water sprays at washing and drying speeds of 180 yards a minute. A special automatic machine, the "DAREX" washer was developed, in which seven specially designed Jenkins' METLKOR brushes are used.

The DAREX Model
ND Blanket
Washer Unit

CRUCIAL TEST FOR JENKINS' BRUSHES

"It is difficult to imagine conditions more severe than for the first three scrubbing brushes in this machine," states Mr. H. H. Bailey, Sales Manager of Printing Products Division of Dewey and Almy Chemical Co., Div. of W. R. Grace and Co. "Temperatures range from 40° to 212°F. Vapors range from saturated steam to mixtures including high percentages of mineral and organic solvents, caustics and acids. At speeds up to 1300 rpm the brushes must not vibrate. Jenkins' brushes are more than equal to these requirements and provide long and satisfactory life."

Specify Jenkins' METLKOR . . .
the original . . . the best Metal-Core Brush

METLKOR®

CYLINDER BRUSHES

and LIFEWOOD® WOOD BACKED BRUSHES

M. W. JENKINS' SONS, INC.
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Small Accessories Improve Your Piping Installation

When piping systems are being designed or installed, there are many places where small accessories are both useful and practical; we call these accessories "trinkets." In many instances, piping will actually operate without the trinkets.

However, the piping can be operated more efficiently and conveniently if trinkets are added; and sometimes there's greater safety and economy. When piping trinkets are added judiciously, they pay their own way quickly.

Take pressure regulators, for example. A simple form of pressure-regulator installation consists of a flow line, gate valve, 100- to 20-psi.-ga. pressure regulator, gauge and siphon, and a 20-psi.-ga. steam line to the process.

This hookup not only represents the utmost simplicity but also is workable. However, this installation is the very minimum of equipment. It does not have any provision for contingencies, operating ease, or safety.

Trinkets Improve a System

By adding a few useful, justifiable trinkets, you have a much better system. Put a gate valve on each side of the regulator, and add a bypass. The bypass lets you remove the regulator for repairs without interrupting service.

Simplifying only one such maintenance operation on the regulator will more than offset the cost of the piping and trinkets added. The proper sizing of bypasses and the right type of valve are of course important.

Install a strainer with a blowoff ahead of the pressure-reducing station. This strainer protects the regulator and valves against foreign matter in the piping. It also provides a means for removing accumulated water before the system is restarted after a shutdown.

Add a relief valve as a safety measure; it protects the low-pressure piping and connected equipment by precluding damage that can occur if the regulator fails to function properly and allows the pressure to build up on the low-pressure side.

Valves Are Easily Improved

There are hundreds of common valve installations where hand-operated valves are well above the plant floor level. To operate these valves, the attendant must use a ladder or climb stairs to a catwalk.

A piping trinket that offers an improvement to the hard-to-reach valve has a simple chain wheel and chain. This trinket permits operation from the floor, eliminates inconvenience, saves time, and promotes safety. If the valve is operated frequently, the chain-wheel operator is a worth-while piping trinket.

Two Solutions Ease Operations

In other instances, extension stems can be applied to overhead valves if service conditions make it feasible to install the valves in upside-down positions.

Or perhaps you have valves below the plant floor level. Then you again have lost time for operation. For this installation, you have two solutions: (1) extension stems for smaller valves and (2) extension stems with stands for larger valves.

There are other devices for operating valves in inaccessible locations; one is an electric-motor operator. However, chain wheels, extension stems, and floor stands for simple installations are always justified in good planning.

Drips and Drains Are Mandatory

Trinkets for drips and drains are relatively small in size but can be big in importance.

Many piping systems do not have adequate drips and drains. This piping is workable up to a point, but it is the minimum in equipment. Damage may be occurring, and there are potential hazards.

The omission of one small valve in a vital spot can cause trouble; and the addition of that valve can be a wise investment.

The American Standards Association code for pressure piping is explicit:

"Suitable drains or drips shall be provided wherever necessary to drain the condensate from all sections of piping and equipment wherever it can collect. Suitable drains also shall be provided to empty water lines, water storage tanks, equipment containing water, etc. when such piping and equipment are out of service. At least one drain valve shall be placed in each drain line." *George W. Hauck, in Crane Valve World.*

Maintenance costs cut 20% with Stainless Steel washers

at Botany Finishing Company,

Passaic, New Jersey

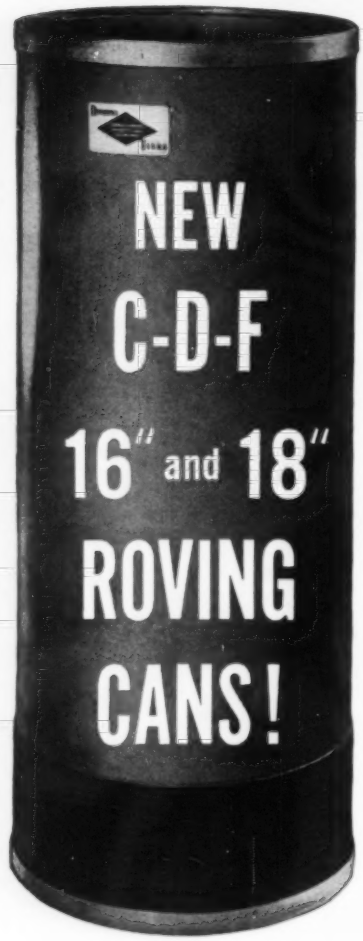
You're looking at the inside of a dolly washer. It removes lint, dirt, excess dye, oils, acids, and alkalies from fabric—and it stays clean itself because it's made from Stainless Steel. Stainless resists corrosion, so the surfaces of the washer stay smooth and clean. All the dirt goes from the fabric to the drain. It can't cling to Stainless Steel.

General Manager Richard G. Stoehr says that the three new Stainless Steel washers at the Botany plant have saved 20% in maintenance costs because they have eliminated so much cleaning time. The old washers took a lot of time to clean because they absorbed dyes and oils that were hard to wash away, and had to be scoured often to remove impurities. Even with extra maintenance, the old washers were unusable within five to eight years. The Stainless Steel washers will last indefinitely.

If you want to reduce maintenance at your plant, build your equipment with USS Stainless Steel. It resists corrosion and it lasts years longer. *USS is a registered trademark*

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tube—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

USS United States Steel



SEAMLESS!
SNAG-FREE!

Now you can get Diamond Fibre Roving Cans in the big 16" and 18" diameters from regular stock at the Spartanburg plant-warehouse.

Static-free rolled fibre top rim for running synthetics; one-piece steel top rim; or swedged top rim—these meet all roving requirements.

CDF Diamond Fibre Roving Cans are smooth, strong, long-lived. Their interior surface, like porcelain, resists cracking and softening—won't snag yarns.

Make the CDF Spartanburg warehouse (834 Hayne Street, Spartanburg, S.C.—Tel. 3-6397) your headquarters for fibre and Celoron loom parts, gears, trucks, and mill boxes. Call Spartanburg or write for CDF Receptacles Catalog.

CDF **CONTINENTAL-DIAMOND FIBRE**
A Subsidiary of The Budd Company
Newark 55, Del.

Boarders Now INSPECT SOCKS At Athens Hosiery Mills

• Inspecting socks stretched on the boarding forms results in a better inspecting job. An incentive rate encourages boarders to find faults.

HOSIERY BOARDERS at Athens Hosiery Mills, Inc., Athens, Tenn., are now inspecting socks. Small faults that previously passed inspectors are now discovered while the socks are stretched over the boarding forms.

Mirrors placed behind the boarding forms extend the full length of the boarding tables and help boarders easily check both sides of the socks.

Inspection of the socks by the boarders has not eliminated the inspector's work, and boarders' production has not suffered. Boarders still process about 200 doz. pairs of socks per 8-hr. day.

An incentive rate is paid to encourage boarders to find faults. All socks that are found faulty are placed on one side.

When the lot has been completely boarded, the faulty socks are placed on a sheet of paper laid over the perfect socks. The boarding-room foreman spot-inspects the faulty socks, and the boarder receives double boarding rates for the number of faulty socks she has found.

The mirrors were erected by the mill's maintenance crew. Framework for the mirrors was constructed from 1-in. hollow square pieces of steel welded to the boarding tables between the forms. The frames are supported at both ends by brackets welded to the frames.

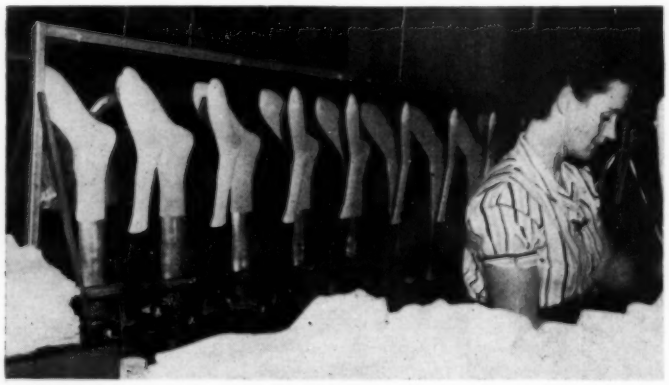
Mirrors Suit All Forms

Two $\frac{3}{16}$-in. plate-glass mirrors are supported in the frame by wire clips screwed to the steel frame. Rubber tubing slipped over the wire clips protects the mirror surface. To suit all sizes of boarding forms, the mirrors are 21 ins. high.

The mirrors have also helped do a better job of boarding because the boarder can position the heel and toe gore at the back of the sock more accurately. Athens' boarding room is cooled by fans at the end of the boarding alleys, and the mirrors help deflect the cool air into each boarding alley where the cool air is required most.

Inspectors' work has been made easier although all socks receive an inspection on the inspecting table. Faulty socks thrown out by the boarder are examined and placed in the fault category by the inspector. Repairable faults are mended.

Stretch socks, fine-gauge socks, and socks made from textured yarns have benefited most from the boarders' inspection because small holes are hard to detect when these socks are examined in the relaxed state on the inspecting board.



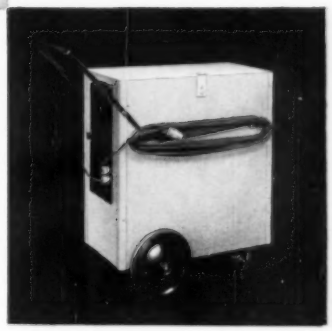
MIRRORS behind the hosiery boarding forms are 21 ins. high and are made from 3/16-in. plate glass. The mirrors are supported in the frames by wire clips.

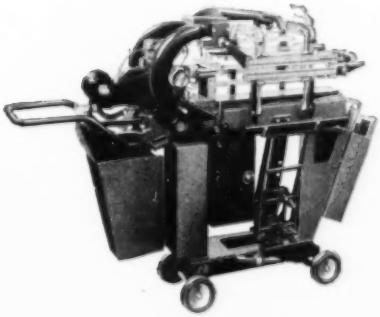
BARBER-COLMAN

SERIES "M" MODELS NOW MADE IN **10** SIZES
FROM 36" TO 126" BY 10" VARIATIONS

PORTABLE *Warp-Tying Machines* FOR ALL PURPOSES

The BARBER-COLMAN line of warp-tying machines has now been extended to cover practically every conceivable application. As noted above, the Type "M" machines are now available in *ten* sizes. These machines tie the *full width* of the warp in one operation, work directly in back of the loom, and are made in several types to tie-in cotton, spun yarns, filaments, wool, worsteds, or synthetic yarns from a flat sheet or from an end-and-end lease. When using a Type "M" Warp-Tying Machine, none of the weaving elements need be removed nor any of the loom settings disturbed. The picture at the right shows the special cart used for protecting the Knotter Unit when not in use and for carrying it from one frame to another when two or more are employed. This carrier also contains the variable speed-controller for the Knotter Unit. These machines are probably the most versatile available for most mill conditions.





IMPROVED SERIES "L" MODELS IDEAL FOR CERTAIN CONDITIONS

BARBER-COLMAN Model "L" machines are familiar to two generations or more of mill people, because they have been on the scene in one form or another for 45 years. The latest designs, one of which is shown here, have many up-to-date improvements which distinguish not only their appearance but also their operation and efficiency. These compact, versatile, and easily-moved machines have many important applications in both large and small mills. Barber-Colman representatives are thoroughly versed in the usefulness and applicability of both Model "L" and Model "M" machines, and can be consulted with confidence as to which might suit a given situation best. Also, it is important to know that all users of Barber-Colman machines are served promptly and skilfully by an alert service group of wide experience.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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Accurate
Yarn is under perfect tension from a central location. One dial adjustment changes tension uniformly at all tension stations.
The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.
DIAL CONTROL
of YARN TENSION

at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-SAVING, QUALITY-IMPROVING, COST-CUTTING LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

It Pays to Know LINDLY the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

Maintenance Checklist Keeps Centrifugal Pumps Running

• Because centrifugal pumps give little trouble, you may be inclined to put them in an out-of-the-way corner and forget them. But they require occasional maintenance. This checklist shows you how to keep the pumps running.

By PAUL C. ZIEMKE

CENTRIFUGAL PUMPS have many advantages: there are no outside moving parts, they're compact and rugged in construction, and they're easily powered by an electric motor connected directly to the shaft.

Although these pumps do not operate readily at variable speeds, output can be controlled by throttling the discharge.

Pump efficiency is as high as 85 to 90%, and this efficiency is maintained for a fairly long period if the piping system is properly designed and maintained.

Even though these pumps are simple in construction, they do wear out from several causes: the pump is wrong for the work to be done; the drive is poor; or maintenance is poor.

The following checklist gives: (1) the fundamental problems you will encounter in single-stage and multi-stage pumps and (2) ways to correct the problems. But it does not include boiler-feed pumps where recirculation and operation are more complicated.

Poor Capacity

1. Low speed
2. Static head too high
3. Obstruction in line
4. Worn rings
5. Damaged impeller
6. Leaking gasket joints
7. Excessive gland leakage

Action To Correct

1. Check power-line frequency and for single-phasing
2. Check friction losses
3. Purge the pipe line and clean the strainer
4. If clearance is excessive, replace rings
5. Reface or replace the impeller
6. Tighten or replace the gasket
7. Check the packing; check shaft alignment and for scored condition

Loss of Suction

1. Flashing (gases in liquid)
2. Suction leaks
3. Water-seal stoppage
4. Excessive suction lift

Action To Correct

1. Check temperature and suction pressure
2. Tighten joints; weld metal leaks
3. Align the seal with the seal opening; unclog seal rings; replace defective seal piping
4. Refill low water; unclog the strainer; free stuck foot valve; remove mud

Limited Discharge

1. Lost prime
2. Low speed
3. Reversed rotation
4. Excessive head
5. Obstructions

Action To Correct

1. Prime discharge and suction
2. Check power-line frequency and for single-phasing
3. Check the motor against the arrow pump
4. Check the nameplate; check friction losses
5. Clear obstructions with compressed air

Heating Bearings

1. Lack of lubrication
2. Misalignment

Action To Correct

1. Clear lines; check clearance
2. Realign the motor and pump so that they are parallel; realign angles of shafts

Excessive Gland Leakage

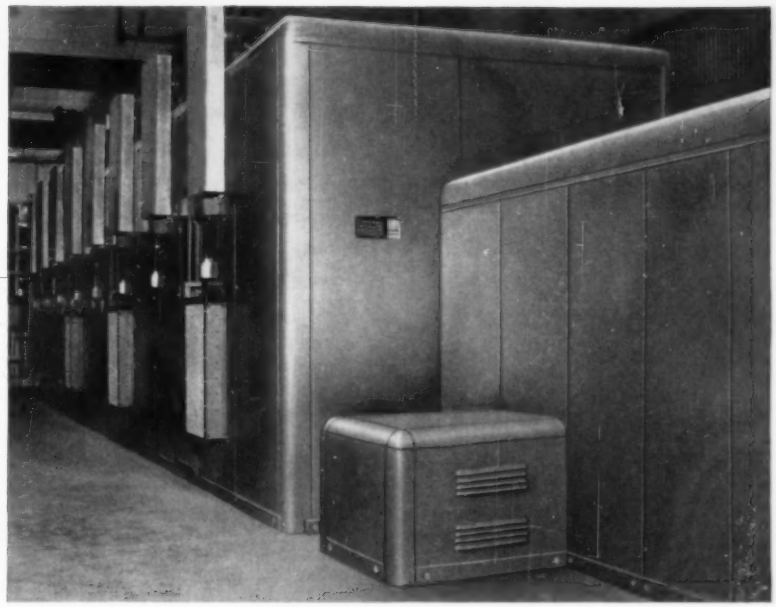
1. Leaking seal rings
2. Improper gland settings
3. High sealing water level
4. Bad packing

Action To Correct

1. Unclog clogged rings; align rings with openings
2. Adjust glands to permit a slight leak
3. Reduce the orifice in the sealing water line
4. Replace hard-compressed packing

Vibration

1. Worn bearings
2. Internal rubbing
3. Misalignment
4. Tight shaft packing



"NATIONAL" PERFORATED APRON CONVEYOR DRYER

For Synthetic Fibres

Evidence of the outstanding efficiency and economy of this "National" drying unit is found in the number of existing and on-order installations among the Nation's leading chemical manufacturers.

Increased drying capacity per square foot of surface; improved uniformity of dried product; much easier apron cleaning; greater efficiency and accessibility of gas or steam heaters; and a generally neater machine to operate and maintain, are characteristics of this drying system resulting from unique and exclusive features of "National" design, construction, operation and control.

The same type of dryer is used for the drying of starch, rubber crumb and a wide variety of chemicals and pharmaceuticals.

The following well-known companies are among the current users of "National" Perforated Apron Conveyor Dryers:

AMERICAN VISCOSE CORPORATION

ARMOUR & COMPANY

DU PONT COMPANY OF CANADA (1956) LTD.

E. I. du PONT de NEMOURS & CO.

AMERICAN ENKA CORP.

NATIONAL ANILINE DIVISION, ALLIED CHEMICAL & DYE CORP.

CANADIAN INDUSTRIES, LTD.

THE DOW CHEMICAL CORP.

CHEMSTRAND CORP.

UNION CARBIDE & CARBON CORP.

Write for Literature Describing These "National" Dryers and Typical Installations.

THE NATIONAL DRYING MACHINERY COMPANY

LEHIGH AVE. and HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent: JONES & HUNT, INC., Gloucester, Mass. • Southern Agent: F. W. WARRINGTON, Charlotte, N. C.
Cable Address: "NADRYMA"—W. U. Code

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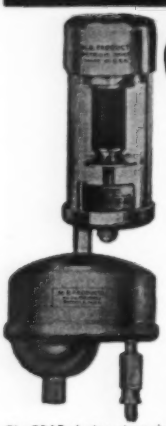

M-B

AUTOMATIC WHIRL-A-WAY AIR LINE FILTER MODEL W-1 and TRAP

RIBBON TYPE FILTERING UNIT removes solids .00039 and larger. Transparent plastic bowl makes filtered foreign matter visible. Gives maximum protection to all types of Lint blowers, Blow-off Hoses and various air-operated controls.

The TRAP ejects water automatically. Operates upon accumulation of 3 to 4 ounces. Discharges in less than 5 seconds. Assures dry air in pneumatic system at all times. Non-corrosive throughout.

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to your H&D Packaging Engineer

HINDE & DAUCH
Division of West Virginia Pulp and Paper Company

Sandusky, Ohio
15 Factories
42 Sales Offices

How 32 Mills Organize QUALITY CONTROL

A survey covering 20 cotton mills and 12 mills that process man-made fibers uncovered interesting facts on quality-control organization that includes—

- Statistical techniques
- Inspection programs
- Training requirements

By PROF. D. S. HAMBY, School of Textiles, N. C. State College

A SURVEY HAS BEEN MADE ON THE ORGANIZATION of quality-control laboratories in textile mills throughout the country. Here is a summary of the answers to the questionnaire that was sent to 32 mills.

In 11 mills, the supervisor of the quality-control laboratory reports to the superintendent of the mill, eight report to the technical superintendent, seven report to the general manager, and two report to the director of research and development.

The quality-control supervisor has a title in 30 of the mills questioned. The title varies from laboratory supervisor to director of research.

Where Control Work Is Done

Control work is conducted in a central laboratory in 11 mills, and each mill has its own laboratory in 15 cases. Two mills have departments that carry out their own testing, and six mills have a combination of the three testing procedures.

This question was asked: "If laboratory tests indicate that a change is necessary, who has the authority to make the change?" Ten mills replied, "The head of the laboratory."

Twelve replies indicate that the laboratory head's boss authorizes changes, and mill management authorizes changes in other mills.

No mills questioned run their quality-control laboratory through the same shifts that the mill works, but 23 mills run the laboratory for the first shift only. Seven mills run a first shift but run a skeleton crew on other shifts. Four mills run a first and second split shift.

The laboratory does analysis work for the fabric-design department in 20 mills questioned, and two mills do analysis work on the yarn blend only.

Research and development work is carried on in 24 control laboratories, but special laboratories are used for this work in four mills.

Six mill replies indicate that the control laboratory is coordinated with the standards department; four mills coordinate their control laboratory with the research department; and 15 other mills coordinate their laboratory with other departments.

Various Statistics Are Used

Out of 11 replies to a question on the use of statistical techniques, two mills use coefficient of variation, two mills use the t-test, two mills use correlation, two mills use analysis of variance, and three mills use other statistical techniques.

A B.S. degree in textile manufacturing is considered essential for the head of a quality-control laboratory in four mills; an M.S. degree in textile manufacturing is considered essential in four other mills.

Training in statistics, manufacturing, and testing is considered essential for control laboratory heads in three mills. Three other mills mention training in mathematics, physics, and statistics. Mill training and on-the-job training are considered essential in six out of the 23 answers received on this subject.

Quality-control technicians vary from one-fourth to four technicians to every 10,000 spindles; but most mills have one or two technicians per 10,000 spindles.

How Fabric Is Inspected

Fabric inspectors come under the supervision of the quality-control department in only one mill questioned; in 22 mills, fabric inspectors are supervised by the production department.

The point system of grading fabrics is used by 14 mills out of 28.

An on-the-loom inspection program is carried out by 21 mills out of 26. Inspectors look for weaving defects in five mills; three mills' inspectors look for off-quality work; and three mills' inspectors look for other faults.

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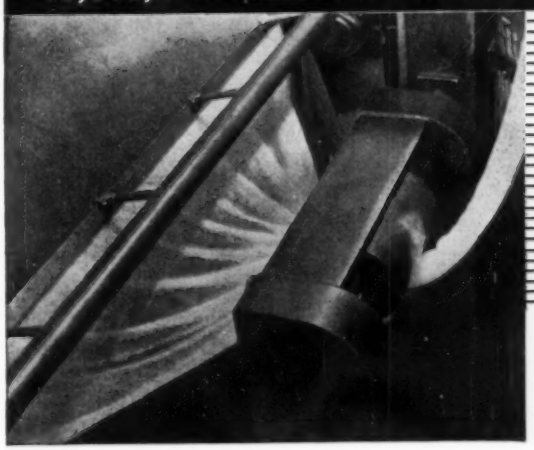
10,000,000 CARDING POINTS NEED PERFECT GRINDING ROLLS



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TRAVERSE WHEEL GRINDER No 120

Sole Makers
ATLAS BRAND
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SOLID GRINDING ROLL No 112

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NEWS ABOUT MEN

Paul Baker has been elected vice president of Hadley-Peoples Mfg. Co., Siler City, N. C.

George Bickford has been named overseer of spinning at Lewiston Woolen Co., Lewiston, Me.

George Bernat, Garland Knitting Mills, Jamaica Plain, Mass., has been elected president of the New England Knitted Outerwear Manufacturers Association.

Henry L. Buchanan has been promoted to operations officer, coordinating manufacturing and sales of Huntsville Mfg. Co., Huntsville, Ala.; Covington Mills, Covington, Ga.; Aleo Mills, Rockingham, N. C.; Spofford Mills, Wilmington, N. C.; and Limestone Mfg. Co., Gaffney, S. C.

Manson H. Carter has been named manager of William Carter Co.'s newly created Toddlers' Div., Needham Heights, Mass.

Marvin B. Crow has been appointed superintendent of J. P. Stevens & Co.'s Victor Plant, Greer, S. C.

Harold G. Dean has been named vice president of Glen Raven Silk Mills, Burnsville, N. C.

Henry Duckman has been named overseer of finishing for Nu-Dye & Finishing Co., Paterson, N. J.

Edgar K. Fitch has retired as treasurer of Mt. Vernon Mills, Inc., Baltimore, Md.

William R. Garrett has been named production manager of Kingstree Mfg. Co., Kingstree, S. C.

John W. Harden has resigned as a vice president of Burlington Industries, Inc., Greensboro, N. C., to enter business for himself.

William G. Higgins has been named assistant manager of William Carter Co.'s newly created Toddlers' Div., Needham Heights, Mass.

Joe N. Jenkins, superintendent of the Lower Plant of The Kendall Co., Pelzer, S. C., has been elected first vice president of the Southern Textile Association.

W. Wesley Jones has been named treasurer of Mt. Vernon Mills, Inc., Baltimore, Md.

Ben E. Jordan, Jr., has been named active head of the Sellers Mfg. Co., Saxaphaw, N. C.

J. J. Klumpp has been named vice president of Fantasy Yarns, Inc., Philadelphia, Pa.

E. D. Lacey, president of Russell-Lacey Mfg. Co., Fairmount, Ga., has been named president of the Tufted Textile Manufacturers Association.

Henry C. Laponsee, Atkinson Spinning Co., Manchester, N. H., is the new president of the National Association of Woolen and Worsted Overseers.

Hyman Marcus has been elected chairman of Artloom Carpet Co., Philadelphia, Pa.

Robert McCrary, superintendent of Carolina Mills, Inc., High Shoals, N. C., has been elected second vice president of the Southern Textile Association.

David J. Meehan has been named president of Continental Mills, Lewiston, Me.

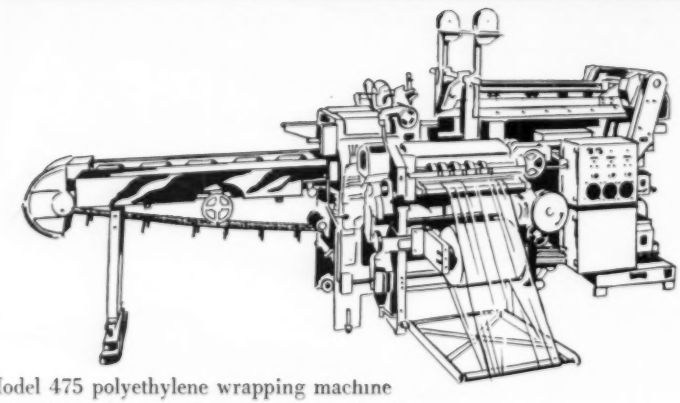
Ervin L. Miller has been elected assistant to the president and vice president of Bates Mfg. Co., Lewiston, Me.

Henry A. Millis, Jr., has joined Burlington Hosiery Co., Greensboro, N. C., as assistant to the president.

Harry Moore has been elected a director of Fair Lawn-Richmond Finishing Co., Fair Lawn, N. J.

Edward F. Mulally has been named superintendent of the Pontiac Finishing Plant of Fruit of the Loom, Inc., Warwick, R. I.

NO NEED TO WAIT! GET POLY*

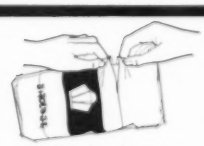


*The Model 475 polyethylene wrapping machine not only handles conventional films such as cellophane, waxed paper, and laminated foils; — but also the new plastic films including polyethylene in the low, medium and high densities, heat-sealing Mylar, cellulose acetate, Polymer-coated cellophane, Vitafilm, Pliofilm, poly-coated papers, etc.

Now . . . Overwrap At Speeds Up to 65 Per Minute in These Ranges:
4¾" to 12½" Lengths . . . 3" to 8" Widths . . . ½" to 4½" Heights

COMPARE FEATURES AND PERFORMANCE BEFORE BUYING

Gently Carries Film Through Machine



Cut Scoring Provides Convenient Package Opening

Exclusive "Thermo-Pad" Sealing Process Creates "Weld-Tite" Seals

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packaging machines, inc.

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Nick Pagani has been appointed an assistant vice president of M. Lowenstein & Sons, New York, N. Y.

George B. Peeler has been promoted to general manager, Gold-Tex Fabric Corp., Rock Hill, S. C.

Norman Roper has been promoted to superintendent of Craftspun Yarns, Inc., Kings Mountain, N. C.

Henry A. Reinhardt has been named vice president of James Lees & Sons Co., Bridgeport, Pa.

Terry Reynolds has joined Cone Mills, Inc., New York, N. Y., as fashion coordinator.

E. A. Ross has been appointed director of manufacturing at Southern Weaving Co. and its new subsidiary, Hudson Narrow Fabric Mill, Easley, S. C.

William H. Suttenfield has been promoted to vice chairman of the board of American Efird Mills, Inc., Mount Holly, N. C.

Edward W. Teague has been named superintendent of Dublin Finishing Co., Dublin, Va.

Thomas S. Tolar has resigned as president of Pacific Mills, Greensboro, N. C.

Elmer Varga has been appointed general foreman of the finishing department of Troy Blanket Mills, Troy, N. H.

Walter Durella Vincent, Dan River Mills, Danville, Va., has been elected president of the Southern Textile Association.

Stanley W. Wade has been named assistant overseer of dyeing at North Star Woolen Mill Co., Sanford, Me.

OBITUARY

George E. Ambrose, 57, vice president and credit manager of Textile Banking Co., New York, N. Y.

Percival Baldwin, a director and former vice president of Collins & Aikman Corp., New York, N. Y.

Melville Croll, 61, vice president of Springs Cotton Mills, Inc., New York, N. Y.

Milton E. Davis, 61, vice president and local plant manager of Franklin Process Co., Philadelphia, Pa.

Joseph E. Duval, 67, former president of Massachusetts Mohair Plush Co., New York, N. Y.

W. Ray Dixon, formerly with J. P. Stevens & Co., Inc., Greer, S. C.

Sam Effenberg, 55, retired president of Diamond Knitting Mills, Philadelphia, Pa.

Al Jaffee, 57, vice president of Jaffee Cotton Products Mfg. Co., Dallas, Tex.

Charles C. McKinney, 41, a director of Denison Cotton Mill Co., Denison, Tex.

William H. Miller, 60, retired president of Crystal Hosiery Mills and Van Anda Mills, New York, N. Y.

William Henry Noelting, president of Faultless Caster Corp., Evansville, Ind.

George H. Reed, Sr., 72, former overseer of winding at the former Kent County Mill, River Point, R. I.

Morris Rosenkrantz, 73, founder of the Argo Knitting Mills, Schuylkill Haven, Pa.

Thomas Love Witherspoon, 50, partner in the Viewpont Hosiery Mills, Hickory, N. C.

OVERWRAPPING SAVINGS NOW!

THE MODEL 475

IS THE MACHINE FOR THE FUTURE!

Select the Model 475 now and automatically anticipate future packaging opportunities. Its wide range gives you great latitude in package sizes for future needs, and because the machine is engineered both for today's regular films and tomorrow's plastic films *(see box), you are assured that your changing merchandising requirements have been anticipated. BATTLE CREEK LOOKS TO YOUR FUTURE.

IS VERSATILE!

Changeover in 15 minutes or less! Its wide range, and ability to fold and seal against a normal end of the package, or to draw the fold underneath and seal against the bottom, offers wide versatility in designing future packages for use on this all-purpose machine.

GIVES ALMOST UNLIMITED FILM CHOICE!

Review the overwraps now handled.* The exclusive "Thermo-Pad" sealing process creates "weld-tite" seals on all these materials. Now choose the film you prefer, and know the Model 475 can give you attractively sealed, economically produced packages.

Here is an all new packaging concept . . . an all new machine incorporating the latest electronic and mechanical devices for overwrapping in plastic films. Battle Creek's exclusive "Thermo-Pad" sealing process as well as properly placed static eliminators for controlling the films being handled, are the new key features assuring you trouble-free wrapping at speeds up to 65 packages per minute. Available with choice of infeeds and optional equipment as desired.

PACKAGES LIKE THESE . . . NOW PRODUCED ON FORMER OVERWRAPPING MACHINES CAN BE EFFICIENTLY HANDLED BY THE NEW MODEL 475

Typical applications include underwear, handkerchiefs, pillow slips, bed sheets, bras, etc. attractively wrapped at "Continuous Flow" speeds up to 70 per minute. A special 5" to 9" range is available for especially wide packages.

Battle Creek's Extensive Line of Standard Overwrapping Machines Continues to Serve Packagers Everywhere.

Battle Creek Invites Your Inquiries On Any Overwrapping Problem You May Have . . . On the New Model 475 Or On Standard Machines in Our Line.

keep it clean!

with

DIXON
Saddle Guide Changeovers

Dixon Super Saddle Guide does away with oiling, practically eliminates roll picking — keeps your process clean, through Dixon design in conjunction with Rulon® (oil-free bearing material developed by Dixon). And the same creative engineering renders misalignment impossible: Unique ball and socket swivel mounting ensures that front roll and front saddle self-align automatically with bottom steel front roll. Complete ruggedly-built installation is so simple that it *costs much less* than any competitive device.

2 STEP INSTALLATION CAN SPREAD INVESTMENT

Dixon Super Saddle Guide changeovers can be installed in two steps, to spread investment: Front roll and saddle combination first; later adding middle rolls, back rolls and saddles — no parts wasted, no costly elements to throw away when installation is completed. Dixon Saddle Guide assemblies for more than 1,000,000 spindles (Duo-Roth or Casablanca type spinning) have been supplied to textile leaders like:

Carlton Yarn Mills (28,000 spdls.)
Chicopee Mfg. Corp. (272,000 spdls.)
Clinton Cotton Mills (73,000 spdls.)

as well as to original equipment manufacturers.

Write for complete data on Dixon Super Saddle Guide

DIXON CORPORATION

BRISTOL RHODE ISLAND

Southern Sales: R. E. L. Holt, Jr., and Associates, Inc., Box 1319, Greensboro, N. C. and Lawyer's Office Building, P. O. Box 321, Greenville, S. C.

Manufacturers of Drafting Devices since 1876

ADELL CHEMICAL CO., Holyoke, Mass.—Has named R. Mercer to the newly created position of technical-service representative. . . . **AIR REDUCTION CO., INC.**, New York, N. Y.—Has announced that Air Reduction Chemical Co. will build a laboratory and office building at Piscataway Township, N. J. Air Reduction Sales Co. has dedicated its plant at South Acton, Mass., which will produce liquid oxygen, nitrogen, and argon. . . . **ALLIED CHEMICAL CORP.**, New York, N. Y.—Has appointed F. J. French vice president of the company's General Chemical Div. H. S. Kisbaugh has been named assistant manager of the New York, N. Y., sales branch for the Solvay Process Div.

JAMES CASSERLY (left) has been appointed sales manager of the Textile Div., Wallerstein Co., Inc., New York, N. Y. GORDON H. PLATT (center) has been named a sales engineer by Taylor Fibre Co., Norristown, Pa., with headquarters at West Hartford, Conn. LEON B. WOHLGEMUTH (right) has been appointed general sales manager for Tubular Products Div., Babcock & Wilcox Co., Beaver Falls, Pa.

LOUIS ALLIS CO., Milwaukee, Wis.—Has completed a district office building and warehouse at 4405 E. Olympic Blvd., Los Angeles, Calif. . . . **AMERICAN AIR FILTER CO., INC.**, Louisville, Ky.—Has named D. H. Minow manager of the Moline, Ill., branch office, succeeding F. Tyler, who has retired. . . . **AMERICAN CYANAMID CO., FIBERS DIV.**, New York, N. Y.—Has named G. A. Kappelmeier as a specialist in spinning. B. W. Wiesen has been named a sales and merchandising representative for Creslan to the knit-goods field. . . . **AMERICAN ENKA CORP.**, New York, N. Y.—Has started production of nylon filament yarns in its new plant at Enka, N. C. . . . **AMERICAN VISCOSE CORP., TEXTILE & TECHNICAL SERVICE DEPT.**, Marcus Hook, Pa.—Has named L. L. Walmsley head of the Dyeing & Finishing Div. . . . **APEX CHEMICAL CO., INC.**, Elizabethport, N. J.—Has named Dr. A. S. Endler to its research and development staff.

APPLETON MACHINE CO., Appleton, Wis.—Has promoted J. M. MacDonald to manager of market development. F. C. Arnold has been appointed Northeastern representative for the firm. He will make his headquarters in Henderson Harbor, N. Y. . . . **ARIZONA CHEMICAL CO.**, New York, N. Y.—Has named Welch, Holme & Clark Co., Inc., Newark, N. J., a distributor of Acintol tall-oil fraction in the New York and metropolitan-New Jersey area. . . . **ATLAS POWDER CO.**, Wilmington, Del.—Has elected W. C. Lytle a vice president. . . . **BAKER INDUSTRIAL TRUCKS, DIV. OF OTIS ELEVATOR CO.**, Cleveland, Ohio—Has named G. V. Clark Western district manager with headquarters in Los Angeles, Calif. . . . **BEAUNIT MILLS, INC.**, New York, N. Y.—Has named J. J. Rieck general manager of research, development, and production of man-made fibers. His headquarters will be in Elizabethton, Tenn. . . . **BECCO CHEMICAL DIV., FOOD MACHINERY & CHEM-**

20th
SOUTHERN TEXTILE EXPOSITION

October 6-10, 1958

TEXTILE HALL — GREENVILLE, SOUTH CAROLINA

Hours: 9 A. M. to 6 P. M. (Monday through Friday)

LARGER—over 16,000 square feet of additional space.

WIDER VARIETY OF EXHIBITS—heavy basic machinery, materials handling and other equipment, supplies, and processes.

IN ONE CONVENIENT LOCATION—essentially everything of importance to top executives as well as those concerned with research, purchasing and production.

Room reservations may be made in advance by writing

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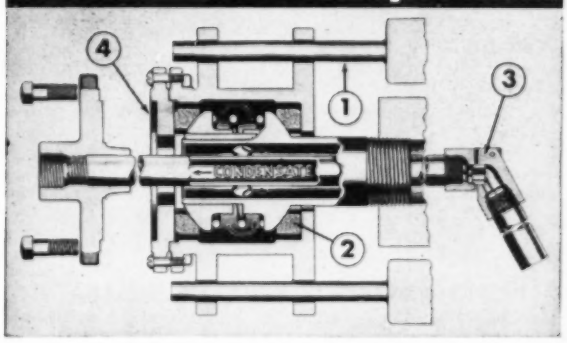
For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. **2.** Seals without packing—needs no lubrication or adjusting. **3.** Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. **4.** Assembly plate holds parts in place when head is removed.

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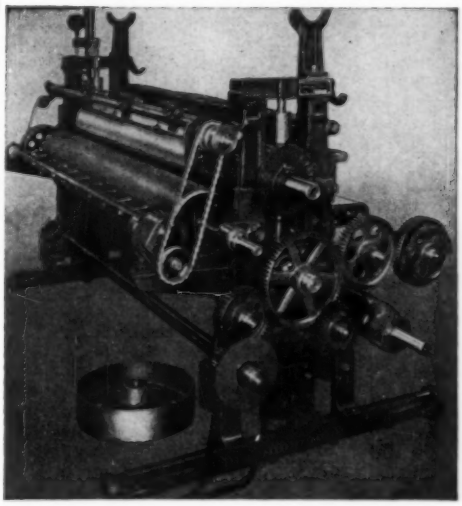
Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

Johnson ROTARY PRESSURE Joints — First in the Textile Industry

THE JOHNSON CORPORATION
814 Wood St., Three Rivers, Mich.

"CONVERSION UNITS"
WILL INCREASE the EFFICIENCY of your
PERALTA® MACHINES
CONVERT NOW TO OUR NEW DESIGN BY INSTALLING:



- Off-Set Roll Arrangement
- Doffing Device Attachment
- Hydraulic Pressure

Write us regarding our new type DOUBLE RUB TAPE CONDENSER for adaptation to woolen cards

Duesberg-Bosson of America, Inc.
Main Street Jefferson, Mass. P. O. Box 28

Increase Production with these UTICA MACHINES

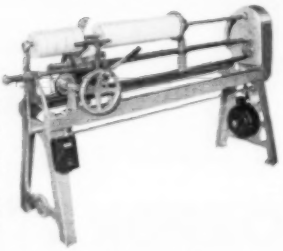
Use these two machines together for the FASTEST and BEST way to cut tubular knitted fabrics into strips THE STRAIGHT WAY OF THE MATERIAL. The Side Slitting and Re-Rolling machine slits the fabric open on the edges, rolling the top firmly on one paper core and the bottom on another at the rate of 50 yards a minute. Then the rolls are transferred to the Strip Cutting machine where they are cut up into strips. The whole job is done quickly, efficiently, economically. Write today for complete details.

1 SIDE SLITTING AND RE-ROLLING MACHINE

- Built-in adjustable spreader . . . takes all size rolls from 7" to 35" (wider machines to order).
- Crushing cutters easily cut any kind of fabric.
- Zerk system of lubrication to all roll shafts.
- Can be furnished with motor drive or counter shaft drive.

2 STRIP CUTTING MACHINE

- Measuring scale for cutting accurate rolls.
- New improved knife sharpening mechanism . . . 4-way adjustment for clean sharp edge on blade.
- Made in 45" and 55" width machines . . . has built in motor drive.
- Cutter shaft 1", 1⅛", 1¼", and 1½" on 45" machines; 1¼" and 1½" on 55" machines.



UTICA Novelty and Mill Specialty Co.

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Builders of Textile Machines Since 1903

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JAMES H. CARVER Box 22, Rutherfordton, N. C.
CRAWFORD "JACK" RHYMER Box 2261, Greenville, S. C.

NEWS ABOUT SUPPLIERS Continued

ICAL CORP., Buffalo, N. Y.—Has promoted F. A. Kraft to assistant manager of the New York-Philadelphia sales territory. E. M. Roth, Jr., has been named manager of the upper-New York-state sales territory. R. R. Kindron has been promoted to technical assistant to the New England sales manager.

BEMIS BRO. BAG CO., St. Louis, Mo.—Has appointed P. L. Wheeler to the newly created position of supervisor, new-product merchandising. . . . **BORDEN CHEMICAL CO.**, New York, N. Y.—Has named E. J. Sullivan executive vice president. . . .

STANLEY STEEL STRAPPING, DIV. OF STANLEY WORKS, New Britain, Conn., has built this plant on a 40-acre plot in New Britain. The plant and equipment represent an investment of more than $2-million.

BRAINARD STEEL DIV., SHARON STEEL CORP., Warren, Ohio—Has enlarged its national-account sales program to better serve textile-strapping customers having many plants throughout the country. A. E. Bardwell has been appointed head of the program. **CLARK-CUTLER-McDERMOTT CO.**, Franklin, Mass.—Has elected F. R. McDermott president. L. G. McWilliams is treasurer, and H. J. Aimone is vice president. C. W. Rice has been elected a director. . . . **COMMERCIAL FACTORS CORP.**, New York, N. Y.—Has named six assistant vice presidents. They are A. L. Karmoihl, J. Kingston, J. A. McMurria, J. H. Newberger, F. P. Perrotta, and J. Steigerwald.

CONTAINER CORP. OF AMERICA, Chicago, Ill.—Has elected H. G. Van der Eb vice president in charge of marketing for the company's Folding Carton Div. . . . **CORIAMID, INC.**, Fitchburg, Mass.—Has been formed to act as exclusive distribution and marketing agent for Coriamid adhesion transmission belting in the United States. . . . **CORN PRODUCTS SALES CO.**, New York, N. Y.—Has named F. C. Hassman, Jr., assistant sales manager for the Southern Div. C. M. Jennewein replaces him as manager of the company's branch office in Memphis, Tenn. . . . **CURTIS & MARBLE MACHINE CO.**, Worcester, Mass.—Has broken ground for a building in Greenville, S. C. . . .

DEWEY & ALMY CHEMICAL CO., Cambridge, Mass.—Has appointed J. F. Murphy, Jr., project manager for its new plant in Owensboro, Ky. . . . **DRAPER CORP.**, Hopedale, Mass.—Has appointed E. Cranshaw manager in charge of all spinning and bobbin sales service. . . . **EASTMAN CHEMICAL PRODUCTS, INC.**, Kingsport, Tenn.—Has announced the retirement of Ashton M. Tenney as vice president. . . . **ECONOMY TEXTILES, INC.**, Gastonia, N. C.—Has been named representative in the North Carolina territory by Edward S. Rudnick, New Bedford, Mass. . . . **ELLIOTT CO.**, Jeanette, Pa.—Has appointed E. F. Downey district manager of the company's Charlotte, N. C., office. . . . **ELWELL-PARKER ELECTRIC CO.**, Cleveland, Ohio—Has appointed G. A. Markell sales manager. . . . **FOOD MACHINERY & CHEMICAL CORP.**—Has changed the name of the Organic Chemicals Div. to Chemicals & Plastic Div. . . . **GENERAL LATEX & CHEMICAL CORP.**, Cambridge, Mass.—Will build a plant in Charlotte, N. C.

McLEAN TRUCKING CO., Winston-Salem, N. C.—Has been granted temporary authority to manage and operate Hayes

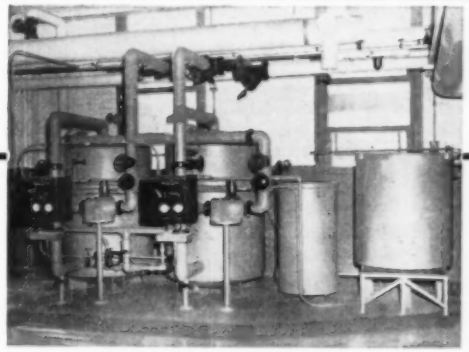
SHIP TEXTILES VIA CHARLESTON

SPA

Strategically situated for cost-saving service to the important textile industry of the Southeast, Charleston is the logical gateway for the export of finished goods and the import of foreign fibers. Shipside packing and marking for export shipment and facilities for handling imports of foreign fibers—both natural and synthetic. Another asset is fast service to inland points via truck and rail.

SOUTH CAROLINA STATE PORTS AUTHORITY

CHARLESTON, SOUTH CAROLINA



INVERSAND WATER SOFTENER PLANT

Producing

CLEAR-IRON FREE 100% SOFT WATER

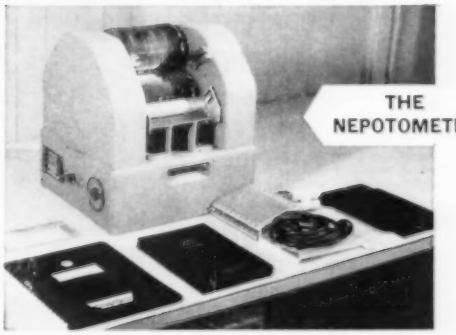
Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.

CLAYTON 9 NEW JERSEY

FORECAST NEPPING QUALITIES OF COTTON



Developed at N. C. State College School of Textiles and on view there.

25 grain sample is processed in four minutes and is comparable to your standards of acceptable cotton for each quality of your yarns and fabrics. Literature and price on request.

WRIGHT MACHINERY COMPANY

DIVISION OF SPERRY RAND CORPORATION

DURHAM, NORTH CAROLINA

CANADA: Sperry Gyroscope Ottawa Limited
P. O. Box 90, Ottawa, Ontario, Canada

Special Rep. for Nepotometer:
THE FRED S. WHITESIDE CORP.
10 High Street Boston 10, Mass.

For more data, write this page number on Reader-Service card. →

COOL any building from the ROOF

effectively, efficiently, economically

Everyone knows how the sun, beating down on the roof of a building, descends into the interior. It makes the occupants uncomfortable and ruins merchandise.

Roof cooling is the answer. It can be used on any roof to keep the building cool or to save air conditioning costs. Best equipment for the job is Ruppright's Rotary Roof Cooler. Easily installed within a few hours by your maintenance department, it produces a thin film of water on the roof. This film evaporates but is continuously renewed by the slowly-rotating cooler making the roof cooler than the air.

RUPPRIGHT'S ROTARY ROOF COOLER

Box 43555-TW, Los Angeles 43, Cal.

INSTALLED WITHIN A FEW HOURS

CHAS. T. MAIN, INC.

ENGINEERS

TEXTILE MILLS AND OTHER INDUSTRIAL PLANTS

Electrical, Steam, Diesel and Hydraulic Engineering
Machinery Reorganizations — Water Supply
Investigations, Reports and Appraisals
Construction Supervision

80 FEDERAL STREET, BOSTON, MASSACHUSETTS
317 SOUTH TRYON STREET, CHARLOTTE, N. C.

G. S. HAND TACHOMETERS and SPEED INDICATORS

for **MAXIMUM PRODUCTION**

IDEAL FOR MOTORS • SHAFTS • SPINDLES • LOOMS • TURBINES • FOR TEXTILE AND POWER PLANTS.

1% Accuracy for any range from 30 to 100,000 RPM or surface speed. Antimagnetic durable mechanism. Efficient repair service at moderate charges.

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.

200-P LAFAYETTE STREET • NEW YORK 12, N.Y.

Industrial Engineers

MODERNIZATION PROGRAMS
PLANT LAYOUTS
MANAGEMENT PROBLEMS
WORK LOAD STUDIES
COST REDUCTION REPORTS
COST SYSTEMS
SPECIAL REPORTS

Specializing in Textiles Since 1914

RALPH E. LOPER CO.

GREENVILLE, S. C. — FALL RIVER, MASS.

NEWS ABOUT SUPPLIERS Continued

Freight Lines, Inc., Springfield, Ill. . . . **MONSANTO CHEMICAL CO.**, St. Louis, Mo.—Has made executive changes in the sales department of the Organic Chemicals Div. H. S. Parham has been named a director of sales for the division. J. P. Ekberg, Jr., has been named his assistant. A. L. Klemm has been appointed district sales manager at Los Angeles, Calif. The Inorganic Chemicals Div. has named A. B. Bradley to its sales department. Dr. W. J. McCarville has been appointed to the company's Washington, D. C., office. . . . **OAKITE PRODUCTS, INC.**, New York, N. Y.—Has appointed J. J. Basch vice president in charge of marketing.

THOMAS J. AULT (left) has been elected president of Saco-Lowell Shops, Boston, Mass. J. LAWRENCE ORR (center) has been promoted to Southern agent in the Charlotte, N. C., office of Whitin Machine Works, Whitinsville, Mass. JOHN NASH (right) has been named sales manager of the Boiler Div., Cleaver-Brooks Co., Milwaukee, Wis.

PACKAGE MACHINERY CO., East Longmeadow, Mass.—Has promoted H. Mosedale, Jr., to vice president in charge of sales. E. W. Forth has been promoted to vice president in charge of engineering. . . . **PENICK & FORD LTD., INC.**, New York, N. Y.—Has appointed Dr. J. E. Kinger director of technical sales service and field development. . . . **PUTNAM CHEMICAL CORP.**, Beacon, N. Y.—Has announced that its plant at Beacon, manufacturing selected types from the Lumatex water-phase pigment system for printing and dyeing, is now on stream. . . . **RELIANCE ELECTRIC & ENGINEERING CO.**, Cleveland, Ohio—Has named E. L. Bronold sales manager of apparatus sales in the marketing division. C. Porter has been named sales-policy manager in the division.

SACO-LOWELL SHOPS, Boston, Mass.—Will build additions to the plant at Sanford, N. C., and another plant in Easley, S. C., to house departments of the company's operations now in Maine. . . . **SEALOL WINDERS, INC.**, Providence, R. I.—Has obtained exclusive rights to manufacture and sell Temco winders. . . . **SEYDEL-WOOLLEY & CO.**, Atlanta, Ga.—Will build a textile-finishing-compound plant. . . . **SIMS METAL WORKS**, West Point, Ga.—Is now manufacturing slat and spike aprons for materials handling formerly produced by Valley Wood Products. . . . **SQUARE D CO.**, Detroit, Mich.—Has appointed M. P. Kartalia general manager of the marketing division. . . . **TENNESSEE CORP.**, Atlanta, Ga.—Has appointed E. J. Seiferle director of market research and appraisal for the marketing research and development department.

TYSON BEARING CO., DIV. OF SKF INDUSTRIES, INC., Massillon, Ohio—Has started an expansion and improvement program costing more than $1-million. . . . **T. B. WOOD'S SONS CO.**, Chambersburg, Pa.—Has appointed E. F. Waltman district representative in the New Jersey-New York area with headquarters at New Brunswick, N. J. . . . **UNION CARBIDE CHEMICAL CO., DIV. OF UNION CARBIDE CORP.**, New York, N. Y.—Has named P. G. Rotko to the staff of the Textile Fibers Dept. He will handle advertising and sales promotion of current and developmental end uses of Dynel fibers. . . . **WYANDOTTE CHEMICAL CORP.**, Wyandotte, Mich.—Has dedicated its new ethylene oxide-glycol plant.

WANT YOUR MAIL DELIVERY SPEEDED UP?

POSTAL ZONE YOUR MAIL!

WHEN YOU include the zone number on mail you send out, you insure speedy delivery.

And, you'll get replies more quickly, too, if you put your own zone number on your—

- envelope corner-cards
- order forms
- Return envelopes
- letterheads

The Post Office has divided 106 cities into postal delivery zones to speed sorting and delivery. Be sure to include zone number when writing to these cities—*after* the name of city—*before* the state.

If you maintain a mailing list, instruct your list department to add zone numbers wherever possible on present names—*always include zone numbers when adding new names!*

This Ad Donated in the Interest of Better Postal Service by:

McGRAW-HILL

The Laurel Leaf

BUSINESS MAGAZINE EDITION

ACCLAIMED!

LAURAMINE RT . . .

ANIONIC SOFTENER

No single Laurel product has won such wide acclaim by the industry in so short a time as our recently-introduced Laurel LAURAMINE RT. It is an anionic softener, recommended for finishing *all* types of yarns and fabrics . . . especially cottons and rayons.

A soft, white paste, Laurel LAURAMINE RT gives a full, soft hand, improves the drape of cloth, imparts excellent lubrication to improve cutting and sewing properties, and gives napping qualities that add a distinct *plus* to fabrics. It has excellent ageing resistance, and *no effect* on shades of dyed goods.

Users also approve Laurel LAURAMINE RT for the *ease* with which it's handled. Predispersed, there's no messy preparation. And, it's compatible with most common finishing agents except cationics.

You, too, will acclaim Laurel LAURAMINE RT the first time you try it. Send for a free sample, and discover all the ways that Laurel LAURAMINE RT can benefit you. No obligation, of course.

Laurel SOAP MANUFACTURING CO., INC.

Warehouses: TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C., Greenville, S. C.

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $16.67 per inch for all advertising appearing on other than a frequency basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$1.50 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Position Wanted ads are ½ of above rate.
Box numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send inquiries to Classified Advertising Division of TEXTILE WORLD, P. O. Box 12, N. Y. 36, N. Y.

One of America's oldest and most respected specialty Manufacturers, located in an attractive Eastern area, is expanding its Research Organization and needs a

TEXTILE TECHNOLOGIST
To Work In
The Northeast Vacation Area

REQUIREMENTS: Textile or Scientific Engineering Degree; some Research, experience preferably in Textiles; Capable of developing NEW and INGENIOUS Methods for MEASURING the Quality of Engineered Textile products.

COMPENSATIONS: More than competitive income; Supplemental Profit-Sharing Retirement Trust Plan; Liberal Sick Benefits and Life Insurance; Three weeks' vacation next year and paid Moving Expenses.

ALL REPLIES will be acknowledged and held in strictest confidence. Selected applicants will be offered a personal interview at our expense. Please send resume including: Education, Experience and Salary Requirements to

P-8525 Textile World, Class. Adv. Div.,
P. O. Box 12, N. Y. 36, N. Y.

Exportation to
WESTERN GERMANY

Important sales organization of textile machines and replacement parts with several offices and a staff of sales engineers who call regularly upon the textile mills, want to accept the sole agency of certain machinery works for the delivery of textile machines and textile mill supplies. Reply

RA-8525, Textile World
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Established Mfg Rep calling on knitting and hosiery mills to represent Southern concern selling materials handling equipment, standard or custom, sheet metal and other steel fabrication, metal stampings, tanks, special dryers and custom equipment on commission basis. Protected territory to right man. Please give full particulars.

RW-8434, Textile World
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

PLANT SUPERINTENDENT

To manage a Jacquard weaving plant in the South. Must have thorough knowledge of Jacquards, and be able to apply up to date management & cost principles to the operation. Send resume with complete EARNING record. Box 463, Realservice 110 W. 34th.

ADDRESS BOX NO. REPLIES TO: Box No.
Classified Adv. Div. of this publication.
Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 520 N. Michigan Ave.
SAN FRANCISCO 4: 68 Post St.

POSITIONS VACANT

Supervisory Personnel Wanted to run newly organized Woolen Mill of about 125 employees in South including Supt. and all operating Department Heads. P-8539, Textile World.

Fancy synthetic, cotton & worsted upholstery weaving mill, seeking services of experienced technical Dobby & Jacquard loom fixer as part of key management. P-8409, Textile World.

SELLING OPPORTUNITIES OFFERED

Representatives Wanted now calling on established industrial firms to take on fine line of aprons, shoe covers, protective sleeves and related safety apparel. Line is one of largest most competitively priced with excellent commission schedule and protected territory. Write giving details and territory covered to P.O. Box 367, Springfield, Ohio.

SELLING OPPORTUNITY OFFERED

Chemical Salesman for Carolina area. Requirements: Technical Education—Age: 27 to 40—Some selling experience, preferably to the textile industry. Salary and Incentive Plan. SW-8265—Textile World.

POSITIONS WANTED

Weave room shift overseer or second hand. Any model C&K or Draper. Natural yarns or synthetic. Standard weaves or novelties. 20 years in loomfixing and supervisory positions. Currently employed. PW-7780, Textile World.

Textile engineer, 27 years industrial experience, age 50, good health, graduated as chemical engineer from French university, and textile engineer of French institute. Vast experience in weaving and dyeing. Wide experience in spinning. Weaving: supervision of looms, straight looms, mechanical, jacquard, pick-pick, etc.; scientific preparation and sizing; new ideas in cloths. Dyeing: Loose, Yarn, slubbing, package, piece, cloth; all standard fibres and new fibres; all dyes and processes; mercerizing, water-proofing, sanforizing, laboratory tests, etc. At present in Bolivia. Was organizer of all the factories which he directed. Speaks French and Spanish, with good knowledge of English. Seeks position as a technical director in a mill preferably in the South of the U.S.A. Write to Raymond Palfray, Casilla No. 2386, La Paz, Bolivia, South America.

Supt.—Ass. Manager—Manager—Sales Canadian Citizen—Textile graduate—20 years experience in weaving and preparation of cotton, worsted or synthetics; Quality and Production Control; Cost analyzes—Production Methods and Standards—Planning—Product development and Sales Organizations. Now employed as ass. manager and wishes to change for responsible position: Hard worker and willing to travel. PW-8244, Textile World.

Plant-Maintenance engineer offers 12 years experience in woolen-worsted and cotton finishing fields to progressive concern. Age 34. Capable of economical management of all plant, equipment, and facility installations and maintenance. Excellent supervisory background. PW-8173, Textile World.

Men in a hiring position: Do you need a graduate Textile Engineer, age 26, with 4 years experience in textile designing, production and quality control, a man who is conscientious, industrious, willing to learn and not afraid to work. Will relocate. If so, write to PW-8498, Textile World.

Young German spinning engineer, single, good English knowledge, experienced all fields cotton spinning & all rationalization problems, sound practical & theoretical background (graduate Reutlingen Staatl. Techn. f. Textind.), now leading executive technical management German cotton mills, seeks position calling for responsibility and initiative, available spring 1959. PW-8436, Textile World.

Textile engineer, 25 years experience in fabric and factory development, designing, production planning, cost analysis, technical management, organizing, supervising, incl. weaving, finishing, water proofing and some spinning of cotton, synthetics, waste, wool, linen products, seeks resp. pos. Resume, references on request. PW-8569, Textile World.

When Answering
BOX NUMBERS . . .

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

DISPLAYED RATE

The advertising rate is $14.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

INFORMATION:

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals.).

An ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

UNDISPLAYED RATE

(Not available for Equipment Advertising) $1.50 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line. (See ¶ on Box Numbers.)

BOX NUMBERS count one additional line.

Send New ADS or Inquiries to Class Adv. of Textile World, P. O. Box 12, New York 36, N. Y., for September Issue Closing August 18

SELECTED OFFERINGS FROM STOCK

6—RIGGS & LUMBARD DYE BECKS . . ALL STAINLESS . . 8-FOOT

TOTALLY ENCLOSED • • 7′ FRONT TO BACK • • 67″ DEEP

3—EXTRACTORS . . Fletcher 48″ . . 30″ . . 28″ S.S	1—10′ DYE BECK . . S.S. 60″ Deep 7′ Front Rack . . Slatted Reel Enclosed . . Like new	2—8 FOOT DYE BECKS . . T.E. 32″ Deep . . . 7′ Front to Back . Like New Condition
2—PADDLE DYE MACHINES 100 lb. S.D. Open . . Monel 250 lb. BL. Enclosed . . S.S.	1—200 lb. SMITH DRUM ROTARY RD-12 . . 6 Pocket . . Monel . . Rebuilt by S.D 1957	2—ATLAS FADEOMETERS . . . Late 2—HUSSONG SKEIN DYERS S.S. . . 600 lb. capacity

14—ATWOOD #100 TWISTERS . . Headless . . 6½″ Spacing . . 272 Spindles Ea.

4—U. S. TEXTILE TWISTERS Face Drive . . 160 Spindles ea. 8″ Ga. . . 1951 Models	9—U. S. REDRAWS . . 1951 Models Spindleless . . 60 Spindles ea.	300—UNIVERSAL #50 Coners L Drive . . Gear Gain . . Late
24—SPINDLES King Spoolers	1—Model 65 ABBOTT WINDER	6—ATWOOD 10-B's
1—SACO AUTO-FEEDER . . 24″ 60″ Duster . . 1950 Model	3—U. S. TEXTILE DOUBLERS 110 Spindles ea. . . 1 lb. package	100 Spindles ea. . . 7″ Ga. . . 1 or 2 lb. package

18—DRAPER XD LOOMS . . 50″ . . 1948-1950 . . DIEHL DRIVES . . 20 HARNESS

1—USTER WARP KNOTTER . . 1951 79″ Draw-in Frame	1—TERRILL BOBBIN STRIPPER Model 735	4—DIRECT WARPERS . . 54¼″ . . 72″

NARROW FABRIC LOOMS BUILT TO YOUR SPECIFICATIONS

Wm. Rabinowitz & Sons

TEXTILE MACHINERY, BOBBINS & SUPPLIES

214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

ONLY PARTIAL LISTING • • SUBJECT PRIOR SALE • • SELECTED STOCK OFFERINGS

---

4 VV-70″ Tensionless Dye Jiggs Model 720
1 Werner 60″ Microset Padder
1 set 15 Werner 70″ SS cans BB & Johnson joints w/L4 Nash pump
1 VV-60″ quetch
1 Maxon Burner #1 SS dye becks 5′-15′
1 VV-70″ tensionless tuber
2 Morrison 70″ Dye Jiggs
1 set of 21 141″ SS cans BB Johnson joints, etc.
1 66″ VV low-type palmer
1 VV-50″ Decatizer Late Style

MAR-DAY TEXTILES

52-60 BERKSHIRE AVE., PATERSON 2, N. J.
MU 4-5132

FOR SALE!

COPPER PRINT ROLLS

40″ to 56″ "W" Bore
45″ and 48″ "J" Bore
48″ "K" Bore

JAMES E. FITZGERALD

10 Purchase St. Fall River, Mass.
Tel. OS 8-5616

FOR SALE

Good Machinery—Low Prices

1—Barber Colman Knotter LC577
1—"Fletcher" 60″ Extracter
1—3 Roll Print Machine 60″
Vertical—12 can dryer-copper cans 80″ wide 30″ dia.
1—VV-70″-High Speed Tuber
1 set—15 SS. Dry Cans 70″x23″ dia.
Hinnekins 2 roll padder—new—66″—15 ton
Hinnekins tenter frame—new—S. S. clips 66″x60′
Hinnekins 2 roll embosser 50″ new
Hinnekins moire calender 50″ new
BB Johnson Joints

STAVE & KESSLER
106 Kearney Street
P. O. Box 1611 Paterson 16, N. J

LIQUIDATIONS
DYEING & FINISHING EQUIPMENT
NARWOOD BROS., BROOKLYN, N. Y.

1—Textile TENTER FRAME, clip type, approx. 72" width x 90' with 92" Quetsch, 3 Section Infra Red and Air Fin Dryer.
1—Butterworth Horiz. CAN DRYER, 22 Cans 86" face x 23" dia. w/Guide Rolls and Friction Letoff.
1—Textile Horiz. CAN DRYER, Copper Cans 24" dia. x 68" face, Mtzd.
1—Arlington 60" SCUTCHER with Guide Rings, Folder, Motor Drive.
2—Grainger 2-Roll STARCH MANGLES, 64" and 69", Rubber and Brass Rolls.
1—Dinsmore Railway SEWING Machine, type 3A, 90" Bed.
1—Color KETTLE, Copper Jacketed, 20 Gal. Capacity.
1—P&W DOUB., MEAS. & WINDING Mach., Model F, 36" Rolls, Motor Drive.
1—C&M Cloth FOLDING & MEAS. Mach. w/Model 5H11 Productometer, Mtzd.
1—C&M 40" Cloth FOLDER, ½ yd. length, w/Model 5H11 Productometer.
1—Measuregraph 64" Cloth ROLLING Machine with ¼ Hp. Motor.
1—Cameron 42" Camachine Rotary SLITTER, WINDING & MEASURING Machine.

This is only a partial listing. Many other items available, including Operating Supplies, Maintenance and Office Equipment.

PENNSYLVANIA GARNETTING CO.
Clifton Heights, Pa.

3—James Hunter 4 Cyl. B.B. 30" x 60" GARNETTS. Complete w/Bramwell automatic feeds, under scrapers, magnetic separators, breasts, 26" Doffers, metallic clothing 18-26 thds./inch, 15 Hp.motors and V-Belt Drives. Reeves V.S. Drive on last Doffer.
2—James Hunter 6 Cyl. B.B. 30" x 60" GARNETTS. Complete w/Bramwell auto. Feeds, under scrapers, magnetic separators, breasts, 26" doffers, metallic clothing 18-26 thds/in., 25 Hp. motors, V-Belt Drives.
1—Schofield 48" B.B. LUMPER, w/Lattice Feed Table.
1—Economy Upstroke BALING PRESS, Mod. 1160F7, making Bale 30" x 60" by up to 50", Motor Driven.
1—Sargent BAGGING Machine, vertical type, with motor drive.
4—Dodge, Butterworth B.B. RAG PICKERS, Cyls. 20" x 30" dia., Feed Tables, Motor Drives.

McDOWELL ASSOCIATES INC.

General Offices 41-E 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No 1 N. Front,
Dock and Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

We own and offer for sale
10B TWISTERS & WINDERS

4 Atwood 10B Twisters, 1951 Model 7" gauge, 3-4/4" rings, 8" Travis, long base anti-friction spindles, 100 spindles each. Now available, running in North Carolina.
1 Universal Roto-Coner 1951 Model 44 of 120 spindles, cast iron drums, 6" paper cones either 9" 36° or 3° 30° arbors.
6 Foster Winders, late model 102, some for paper cones, tubes and Barber-Colman cheese.
1 Model L Terrell Quill Stripper for cleaning paper cop quills as used in shuttle changing looms. Model 1950, Serial 576, with bobbin elevator, box hoist and hopper.

H. C. SKELTON, INC.,
TEXTILE MACHINERY
Telephone 1009 Union, South Carolina

FOR SALE
Almost New
WOOD WATER TANK

7500 gal. capacity with 4" pump-fittings and 10 Hp., G.E. Motor. Very reasonable.

Best Dyeing & Finishing Co., Inc.
829 Newark Avenue
Elizabeth, N. J.

Largest Offering Modern Machinery
for:
DYEING • FINISHING • PRINTING • BLEACHING
From a Single Machine to a Complete Plant

WRITE WIRE PHONE

SOUTHERN OFFICE
IPA SOUTHERN, INC.
610 S. Carolina Nat. Bk. Bldg.
Greenville, South Carolina
Tel: Cedar 2-3561

IPA

NORTHERN OFFICE
INDUSTRIAL PRODUCTS OF AMERICA
140 Market St., Paterson, N. J.
Tel. Sherwood 2-6614 Cable: Texindus

BIALEK'S BEST BUYS

Van VL. Palmer Tenter, Nat. Housing
Nat. Loop Dryer 110", 8-Fan
Verduin 15-ton Padder
Nat. Heat Set Unit
Hayes Alum. Section Beams
6—Draper 64" XD Dobby Looms
36—Spindles, Whitin Quiller
1—Abbott Radial Quiller, 1957
Terrell Bobbin Stripper, Model A3.
40—C&K, C-5, Dobby, 4x1 Auto.
40—C&K, Model C-4, 4x1 Conv., 72" R.S., 25-Harness Dobby.
Draper Model "O", 80", 90", 100", 110", 936-Hook Single Index Jacquards Available for "O" Looms
1—Sipp 84" Hi-Speed Metal Warper with 840-end Magazine Creel
1—Abbott 118-Spindle Quiller, Auto. Pinboard Device
1—Cocker Beamer with Sipp Creel

THEODORE BIALEK & CO.

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
LONGACRE 3-4978-9

11-20TH AVENUE
PATERSON, N. J.
LAMBERT 3-5886-7

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this
Searchlight Section
of
TEXTILE WORLD

is an index of reliable sources for Used and Rebuilt textile machinery. Consult the *Searchlight Section* in regular issues for later offerings.

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INDEX TO ADVERTISERS

An * indicates advertisers who have essential technical information on their products in the **IMPORTANT** 1958–1959 **FACT FILE** issue.

Abbott Machine Co., Inc... 28
Alemite Div.
Stewart-Warner Corp..... 100
*Allen-Bradley Co. ....3rd Cover
American Moistening Co... 20
*American Viscose Corp..... 105
Ames Iron Works, Inc..... 12
Anheuser-Busch, Inc. 66
Armstrong Cork Co.....94-95
*Atkinson, Haserick & Co... 91
*Aurora Pump Dv.
The New York Air Brake Co. 122

*Bahnson Company 22
Barber-Colman Co.
Textile Div. 127
Battle Creek Pkg'g. Machs., Inc. 132-133
Bellows Co. 32
Bristol Co. 30

Carrier Corp. 123
Carter, Inc., A. B..... 29
Celanese Corp. of America. 109
Cleveland Tramrail Div.
Cleveland Crane & Eng'g Co. 119
*Cocker Machine & Foundry Co. 36
Continental-Diamond Fibre Div.
The Budd Co., Inc..... 126
Corn Prods. Sales Co..... 74
Crane Co. 26

*Dary Co. Ring Traveler.... 136
Deutscher Spinnereimaschinenbau, Ingolstadt .. 33
*Diehl Mfg. Co. 115
Dixon Corp. 134
Dodge Mfg. Corp. 35
Dommerich & Co., Inc., L. F. 131
Dow Chemical Co. 23, 79
*Draper Corporation 40-41
Dronsfield Bros. Ltd..... 131
Duesberg-Bosson of America, Inc. 135

Esso Standard Oil Co..... 21

Fairtex Corp. 111
*Foster Machine Co..... 103
Franklin Process Co..... 96

Harshaw Chemical Co..... 68
Herr Mfg. Co., Inc..... 34
Hinde & Dauch..... 130
*Hubinger Co., The..... 110
Hungerford & Terry, Inc... 137

Interntional Salt Co., Inc. 70

Jenkins' Sons, Inc., M. W 124
*Johnson Corp 135

Keever Starch Co..... 78
Kidde Mfg. Co..... 113

Laurel Soap Mfg. Co., Inc... 139
Leighton Machine Co..... 19
Lindly & Co., Inc..... 128
Link-Belt Co. 15
*Livingston & Haven, Inc... 118
Loper Co., Ralph E..... 138

*Main, Inc., Charles T..... 138
M-B Products Co..... 130
Metlon Corp. 107
Minneapolis-Honeywell 92
Micro Switch Div..... 37
Morton Salt Co..... 67

Nash Co., J. M..... 122
Nashua Corp. 16
National Aniline Div., Allied Chem Corp., Fiber Div. 99
*National Drying Machinery Co. 129

*Platt Bros. Ltd..... 91
Pneumafil Corp. 89
*Proctor & Schwartz, Inc... 38
*Robert & Co., Associates 2nd Cover

Roberts Co. 17
*Rohm & Haas Co..... 85
Ruppright Rotary Roof Cooler 138

*Saco-Lowell Shops 24, 80
Scherr Co., Inc., George.. 138
Shawinigan Resins Corp. .. 71
Solvay Process Div.
Allied Chem. Corp..... 75
*Sonoco Products Co..... 117
South Carolina State Ports Authority 137
Steel Heddle Mfg. Co..... 25
*Stowe-Woodward, Inc..... 114
*Supreme Knitting Machine Co., Inc. 39

Tennant Co., G. H..... 112
Textile Banking Co..... 120
Textile Hall Corp..... 135
*Textile Machine Works.... 42
*Thilmany Pulp & Paper Co. 87
Toledo Scale Co..... 18
Tompkins Bros. Co..... 116
Torrington Co., The (Bearings) 121
*Turbo Machine Co..... 44

Unionmatex, Textilmaschinen-Union G.M.B.H. 31
*U. S. Ring Traveler Co.... 116
U. S. Steel Corp..... 125
Universal Winding Co..... 82
*Utica Novelty & Mill Specialty Co. 136

Veeder-Root, Inc.....4th Cover

Whitin Machine Works.... 27
Wildman-Jacquard Co. 11
*Wright Machinery Co.
Div. of Sperry Rand Co. 137

CLASSIFIED ADVERTISING
F. J. Eberle, Business Mgr.

EMPLOYMENT OPPORTUNITIES 140

EQUIPMENT MERCHANDISE
(Used or Surplus New)
For Sale 141-145

ADVERTISERS INDEX

Advanced Textile Co..... 144
Best Dyeing & Finishing Co., Inc. 142
Bialek & Co., Theodore..... 142
Blackstone Mills, Inc..... 145
Blank Co., Inc., A & M..... 144
Cumberland Machinery Corp... 143
Fitzgerald, James E..... 141
Industrial Products of America. 142
Label Weave 140
Machinery Sales Corporation... 144
Manufacturers' Outlet 145
Mar-Day Textiles 141
McDowell Associates, Inc..... 142
Miller Machinery Co..... 145
Mohawk Valley Ktg. Machinery Co. 145
Pennsylvania Spool & Equipment Co. 145
Perry Equipment Corp..... 145
Rabinowitz & Sons, Wm. 141
Republic Textile Equipment Co. 145
Skelton, Inc. H. C. 142
Southern Textile Works..... 145
Stave & Kessler..... 141
Textile Auxiliaries Inc..... 141

This index is published as a convenience to the reader. Every care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

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LITERATURE, BOOKLETS AND TECHNICAL BULLETINS AVAILABLE FROM FOLLOWING ADVERTISERS IN THIS ISSUE:

A-1	ALEMITE DIV.	100
A-2	ALLEN-BRADLEY CO.	3rd Cover
A-3	AURORA PUMP DIV.	122
A-4	BELLOWS CO.	32
A-5	BRISTOL CO.	30
A-6	CLEVELAND CRANE & ENG'G. CO.	119
A-7	CONTINENTAL-DIAMOND FIBRE DIV.	126
A-8	CRANE CO.	26
A-9	DIEHL MFG. CO.	115
A-10	DIXON CORP.	134
A-11	DODGE MFG. CO.	97
A-12	HARSHAW CHEMICAL CO.	68
A-13	HUBINGER CO.	110
A-14	JOHNSON CORP.	135
A-15	LINK-BELT CO.	15
A-16	LIVINGSTON & HAVEN INC.	118
A-17	MICRO SWITCH DIV.	37
A-18	NASH CO.	122
A-19	NASHUA CORP.	16
A-20	NATIONAL DRYING MCHRY. CO.	129
A-21	SCHERR CO., GEORGE	138
A-22	SHAWINIGAN RESINS CORP.	71
A-23	SOLVAY PROCESS DIV.	75
A-24	SUPREME KNITTING MACH. CO.	39
A-25	THILMANY PULP & PAPER CO.	87
A-26	TOLEDO SCALE CO.	18
A-27	WILDMAN-JACQUARD CO.	11
A-28	WRIGHT MACHINERY CO.	137

ADVERTISERS' LITERATURE: This card expires October 31, 1958

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11
A-12 A-13 A-14 A-15 A-16 A-17 A-18 A-19 A-20 A-21 A-22 A-23 A-24 A-25
A-26 A-27 A-28

ADDITIONAL INFORMATION ON ADVERTISEMENTS (Jot Numbers)

PAGE	SUBJECT	PAGE	SUBJECT

EQUIPMENT AND SUPPLY NEWS:
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8
T-9 T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22
T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36

NEW LITERATURE:
F-1 F-2 F-3 F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11
F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-25
F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39
F-40 F-41 F-42 F-43 F-44 F-45 F-46 F-47 F-48 F-49 F-50

DYES AND CHEMICALS:
D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10
D-11 D-12 D-13 D-14 D-15 D-16 D-17

EDITORIAL REPRINTS Numbers Listed on Back

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y., August, 1958

ADVERTISERS' LITERATURE: This card expires October 31, 1958

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11
A-12 A-13 A-14 A-15 A-16 A-17 A-18 A-19 A-20 A-21 A-22 A-23 A-24 A-25
A-26 A-27 A-28

ADDITIONAL INFORMATION ON ADVERTISEMENTS (Jot Numbers)

PAGE	SUBJECT	PAGE	SUBJECT

EQUIPMENT AND SUPPLY NEWS:
T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8
T-9 T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22
T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36

NEW LITERATURE:
F-1 F-2 F-3 F-4 F-5 F-6 F-7 F-8 F-9 F-10 F-11
F-12 F-13 F-14 F-15 F-16 F-17 F-18 F-19 F-20 F-21 F-22 F-23 F-24 F-25
F-26 F-27 F-28 F-29 F-30 F-31 F-32 F-33 F-34 F-35 F-36 F-37 F-38 F-39
F-40 F-41 F-42 F-43 F-44 F-45 F-46 F-47 F-48 F-49 F-50

DYES AND CHEMICALS:
D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10
D-11 D-12 D-13 D-14 D-15 D-16 D-17

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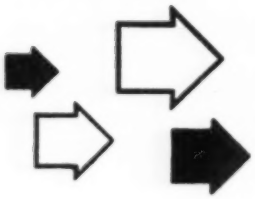

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An authoritative report that gives a brief background on crushproofing and explains how cotton fiber reacts to resin finishes, how crushproofing works on cotton, the types of chemicals used, and pointers on applying the finishes. R-2

COTTON-FIBER TABLE
50¢ each, 40¢ each in lots of 20 or more

New edition lists raw-cotton properties and manufacturing performance of the 11 leading varieties of cotton. Other data show fiber consumption in the U. S. and properties of cotton used in 32 basic textiles. R-3

CHEMICAL FINISHING TECHNIQUES
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Set of 5 articles. $1.25 per set

A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basic of structure, opens the series. R-5

METALLIC-YARN WET-PROCESSING GUIDE
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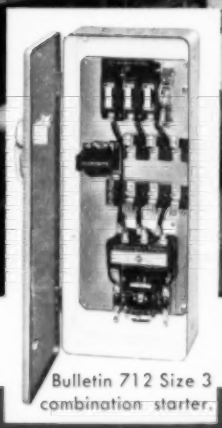
An illustrated series of articles that show each major cloth defect, give its causes, and explain how to eliminate it. R-8



Bulletin 712 Size 3 combination starter.

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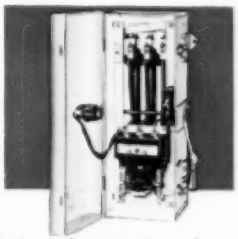
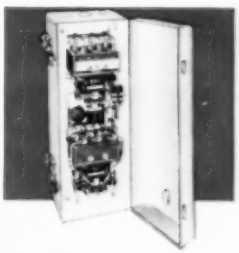
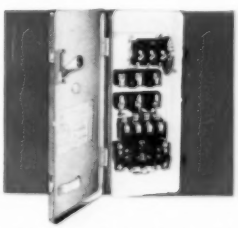


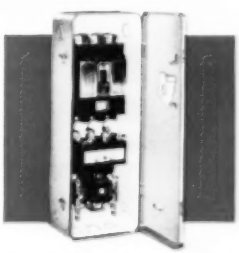
Bulletin 640 manual stepless resistance starter. Acceleration is under control of operator at all times.



Bulletin 740 automatic resistance starter for velvet-smooth starting. Adjustable to exact motor load.



Bulletin 712, Size 1, combination across-the-line solenoid starter with visible contact disconnect switch.



Bulletin 713 combines an across-the-line solenoid starter with an I.T.E. circuit breaker—in one cabinet.

Bulletin 1209 manually operated loom starter. Enclosure protects it against dust and lint.

Bulletin 709 automatic solenoid starter for across-the-line starting. Made in 8 sizes in ratings to 300 hp, 220 v; 600 hp, 440-550 v.

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you have to COUNT
to get Accurate
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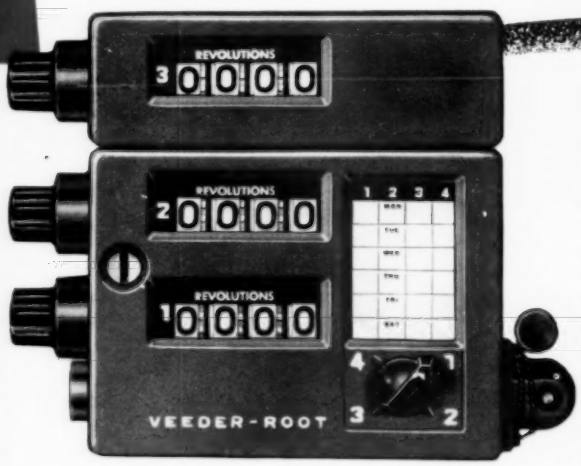

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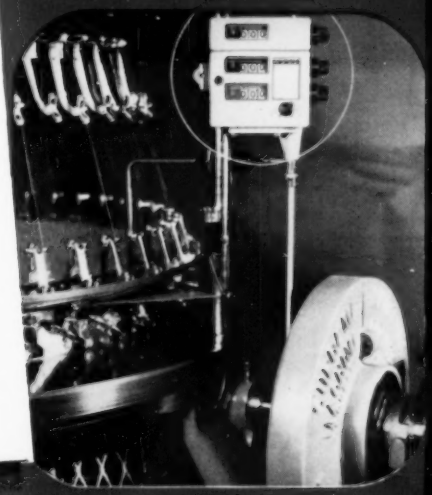
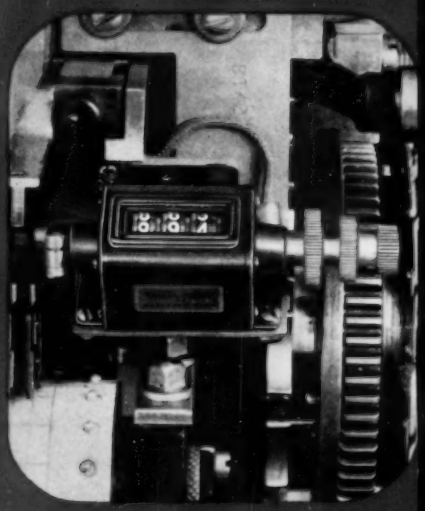
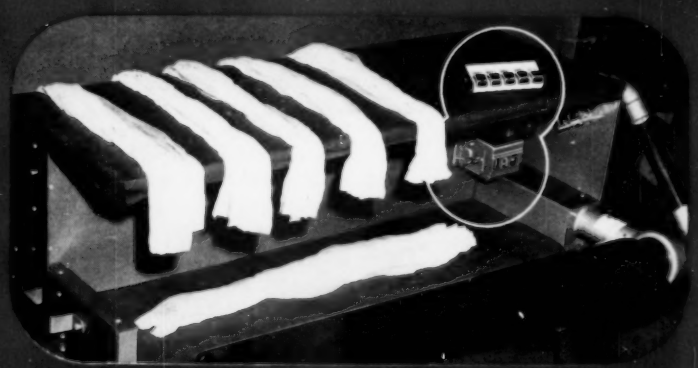


3-shift Revolution Counter on Supreme Knitting Machine.



Small Subtractive Predetermining Counter on Philadelphia Jacquard Knitting Machine.



Vary Tally and Large-Figure Hosiery Dozens Counter on Specialty Mfg. Company's "Inspectomatic" Table.

Small Reset Ratchet Counter on Textile Machine Works' full-fashioned hosiery machine.

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